**Reducing Bag Theft in Bars**

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## Introduction

Chapter 2 set out the Security Function Framework (SFF) as a systematic way of describing designs against crime. This chapter puts the framework through its paces by an intimate account of the design rationale of Grippa clips, intended to prevent bag theft in bars.

Besides reporting on a specific research, design and development project, this exercise serves to illustrate the complexity and challenge of the design against crime task and the ongoing progress in weaving together design and crime science research and practice. It also tests out the capacity of SFF to handle the task for which it was developed.

Note that this is a description and discussion of how the Grippa is *intended* to function. Although it incorporates findings of various user-testing exercises, it is not an evaluation of the impact of the Grippa on crime – although a version of SFF with an evaluative facet could be developed. What happened in the attempted impact evaluation is described below (and see also Ekblom 2011c).

### *SFF descriptions – a reminder*

As set out in Chapter 2 the SFF description covers four main dimensions:

- *Purpose* from diverse stakeholder perspectives (what the product is *for*, '*desire'* requirements that make it otherwise attractive, and '*social/hygiene'* requirements that meet society's needs and regulations)
- *Security niche* (how the product fits in with the ecology of other security arrangements)
- *Mechanisms* (how the product works in terms of cause and effect, from both physical and human action perspectives) and
- *Technicality* (how it's constructed and manufactured, and how it operates)

In this account the last two are merged given how the latter intimately realises the former.

***Background to the case study***

If you visit a public bar, cafe or library your bag, if you have one, is at risk of being stolen. The British Crime Survey suggests that people who visit cafes and bars three or more times a week are at more than twice the risk of theft than those who do not (Kershaw, Nicholas and Walker 2008). Diverse attempts have been made to prevent this category of crime but those of interest here centre on the design of products – furniture and fittings – to help bag-owners in such places to protect their property. Various items have been designed and tested at the Design Against Crime Research Centre (DACRC). One is the Stop Thief chair, described in Chapter 2.[1] Another – the subject of this case study – is the Grippa Clip – a hinged loop fixed under the table edge on which people may hang their bags. Figure 9.1 shows the final version. DACRC and UCL Jill Dando Institute of Security and Crime Science collaborated on what was intended to be a thorough design process informed by research and theory, followed by a large-scale and rigorous impact evaluation of the clips on crime. The design and evaluation processes built on earlier experience of developing and trialling clips as documented in Smith et al. (2006). Fuller, and visually-illustrated reports of the research, design process and attempted impact evaluation, are on www.grippaclip.com.

[Figure 9.1 about here]

**Figure 9.1 Grippa clip, final version**

**Grippa's purpose**

The principal purpose of the Grippa is to *reduce the risk of theft of bags from owners seated at tables in places of public resort* such as bars, cafes or libraries. But underlying this deceptively simple statement is considerable diversity when we consider the perspectives of different stakeholders and dutyholders.

***Purpose from the bag-owner's perspective***

We take as the immediate user, the bag-owners whose bags are at risk of theft.

*Principal purpose*

The principal purpose of the Grippa clip is theft reduction. Bag-owners want to reduce the risk of loss of bag and contents. The fact of victimisation from theft is in itself unpleasant. The event may bring with it further harms including sentimental and financial loss, crime proliferation (e.g. mishandling of bank cards) and sheer hassle (finding how/where to report the crime, stopping and renewing bank cards, changing locks etc).

Other *quality of life/community safety* harms more broadly associated with the theft problem include an inability to relax in bars, whether in anticipation of risk or recollection of previous direct or vicariously known theft events. Helping bag-owners feel safe enough to enjoy themselves – reassurance – may therefore be a significant benefit, though they may not have consciously voiced this to others, or indeed themselves. But it would be important not to make owners feel so safe they relied entirely on technology and dropped their guard – an issue of *risk homeostasis* (Wilde 1998; Norman 1990 – who suggests for example designing bathtubs that look more slippery than they really are to ensure bathers take necessary precautions) returned to below.

*Subsidiary purposes*

Subsidiary purposes for customers (both bag-owners and others) include tidiness and keeping bags off the floor and hence clean, the kind of thing addressed by a 'customer care' approach by the bar.

*Desire requirements*

The desire requirements that follow were identified from these sources: 1) intuitive attempts of the research/design team to think like the modal bar customer; 2) research into crime patterns in bars (Sidebottom and Bowers 2010); 3) trial iterations of Grippa table mock-ups in workshops with bar management, police and design students;[2] 4) interviews and observations on pilot trials of Grippas in two bars in London and two in Barcelona;[3] and 5) observations of functionally-equivalent Chelsea clips in real-world use and under scrutiny for their design and construction.[4]

According to these sources bag-owners want:[5]

- Easy, intuitive operation of clips
- Capacity to protect a wide range of sizes, shapes and weights of bag (unlike the Chelsea clip whose gape and strength were limited by form and materials)

Customers (not just bag-owners) want to avoid:

- *Injury* to themselves or damage to their bags and clothing *directly* from the Grippa, whether its mere presence (e.g. bruising from the projecting clip) or its operation (e.g. trapping fingers)
- *Injury indirectly* from tipping table and contents (due to the suspended weight), or in case of breakage (e.g. bag drops to floor upon breakage, sharp stump remains under table); tripping on bag when rising from/approaching seat; or bag getting kicked, trampled or scuffed by self or others when held in particular positions on or above the floor
- *Nuisance* from effort to hitch/unhitch bag, not just on arrival/departure, but if going to the bar to order a drink, answering one's mobile, visiting the toilet, popping outside for a smoke etc
- *Forgetting bag* on leaving bar
- Acquiring an 'uncool' or otherwise *inappropriate image* from being seen to be concerned enough about crime risk to use the Grippa
- *Adverse ambience* – wider harms from the sight of obvious security products conveying the feeling of being beleaguered by crime, or the lesser harm of having to view unattractive fittings in the bar
- Costs of Grippas passed on as higher price of drinks
- Increased risk of theft by signalling the possession of an attractive bag to would-be offenders; or by inappropriately persuading the bowner to take the bag off their person if they are otherwise most comfortable and secure with it there.

*Hygiene requirements – society perspectives*

Society's interests were variously represented by agencies such as the police and embedded in national/local government policy. This information was obtained by informal discussions with police design advisors and crime reduction teams, a familiarity with government policy in terms of published literature on crime strategy, and awareness of other policy issues across government. Via the local police, the interests of local government departments such as community safety, health and safety, and trading standards were vicariously voiced. Requirements include:

- Avoiding costs to taxpayers of crime and insecurity, and moral costs of leading potential criminals into temptation
- Avoiding excessive use of energy or raw materials, and creation of waste from manufacture and distribution; promoting recycling at end of life
- Respecting health and safety (e.g. avoiding trip-injuries), and public health (e.g. cleanability)

- Being supportive of local social/economic regeneration strategies (encouraging custom and improving area reputation)
- Being inclusive e.g. usable by elderly or disabled

***Purpose from the bar management's perspective***

This information was obtained from informal interviews with bar staff, bar managers and senior district managers of the collaborating bar company; also from workshops where staff were variously presented with (crime analysis) research findings, and mock-ups of Grippas on tables which they could try out and discuss with the designers. It was supplemented by our own informal 'business thinking' knowledge and exercises.

Note that the purposes and requirements of the bar company are not homogeneous. The people serving behind the bar and dealing directly with victims and others, will have a different set of priorities and perceptions from the middle or senior managers in a context of limited company loyalty and short-term employment; in other contexts staff may be longer-serving, loyal and committed to company values (and even landlords/ladies who own the premises and therefore have a greater personal investment). This staff attitude subsequently appeared crucial to the utilisation of the Grippas by customers (Ekblom 2011c).

*Principal and subsidiary purpose for bar management*

The bar company's principal strategic purpose is to *make profit*, without impediment or interruption. A subsidiary purpose may be positive enhancement of *corporate social responsibility and company image or reputation* – normally to support profit rather than necessarily for their own sake.

How do such strategic purposes relate to Grippa clips? The most important issue is why a bar company would want to install Grippas at all, when the main benefits arguably accrue primarily or exclusively to customers. Indeed there are risks to the company's profit and image to consider, discussed under 'desirability' below. Possible positive reasons include:

- Attracting more customers and hence gaining competitive advantage over rivals through image of improved security and customer care
- Avoiding loss of customers through unpleasant theft experiences associated with venue
- Avoiding hassle from bag-owners who, on discovering their loss, take up time of bar staff
- Alleviating/averting the attentions of police and/or health and safety officials seeking to reduce a bag theft problem, which may generate detriments ranging from hassle to, in extreme cases, loss of licence
- Enhancing company's CSR image

Some of these purposes could be *collective* – all bars would have common interest in reducing theft if a particular neighbourhood acquired the reputation of a theft hotspot to be avoided by customers. Others would be *individualistic* – displacing theft to competitors could have inadvertent benefits!

All the above purposes more or less *align* the bar management interests with the purposes and desirability requirements of *customers* identified above – simply because happy and safe-feeling customers buy drinks and return for more. To the extent that the police and health and safety officials can effectively apply pressure, bar management interests will also become aligned with societal 'hygiene' requirements of crime prevention/ community safety. What is less clear is how *far* the bar management perceive this to be beneficial. This in turn depends on what they believe the customers, or the public officials, to perceive and to want; what they believe is the risk of choosing not to comply with the wishes or meet the needs of either party, and what is the minimum compliance needed to secure their own objectives. We must consider the possibility of compliance and alignment which is both *tokenistic and temporary*, i.e. suspended as soon as the pressure appears to be off (Ekblom 2011c).

*Desire requirements for bar management*
It's somewhat more straightforward to identify the generic desire requirements of Grippas for the bar management, which cover a mix of 'in-function' and 'as-object' issues:

- Economy of purchase
- Economy and ease of installation
- Durability
- Economy and ease of maintenance and replacement/removal with minimal damage
- Possible recyclability/transfer to new furniture (bars change their furniture, and sometimes style of furniture, every few years)
- Ease of cleaning
- No impediment to the movement or stacking of tables
- Aesthetics of product, alone and in combination with furniture, interior décor, brand identity
- Versatility – can work on places other than tables

Desire requirements specifically related to crime and safety include:
- *Not* awakening customers' perceptions of risk and feelings of anxiety about crime hence loss of trade
- *Not* presenting a negative image of the venue or company hence loss of trade
- *Not* conceding liability of bar in case of theft hence extra costs

***Purpose from manufacturing and marketing perspective***
Although DAC Research Centre is a non profit-making university-based institution, our interest is in designing crime preventive products which make a significant and

widespread impact on crime and quality of life. This requires the products to be of a kind which could be made, sold and used in the real world for a profit and a decent and durable return on investment. We therefore take the role of the 'pseudo-commercial' marketer and manufacturer ourselves. This is based on experience of *actual* licensing to industry of some of our products (including CaMden bike stand and Stop Thief chairs) and team members' experience of being in industry themselves. Various attempts to market Grippa clips are in progress.

*Principal and subsidiary purpose for manufacturers and marketers*
Manufacturers, wholesalers and retailers or shopfitting service providers all, obviously enough, wish to make their own *profit*, so must align themselves with all the above purposes and requirements, especially demand from the bar companies who are their customers, and ultimately, by proxy, from customers in bars – the end users. Beyond basic profitability of marketing an individual product, offering security along with other services and products may confer a *unique selling point or competitive edge*, or allow operations or production to enter *new domains*.

*Desire requirements for manufacturers and marketers*
Generic desire requirements include:
- Ease and economy of manufacture including low cost of raw materials, reliability of their sourcing, production and durability of casting moulds, minimal waste/ low reject rate, simplicity of production, fewest parts
- Ease of packing/storage/transportation without damage or deterioration
- Ease of installation
- Widest possible market for fewest possible variants, to enable efficiencies/economies of scale, and durability of design in face of new décor and furniture to be fitted to – hence versatility of style and fitting is more important than being maximally adapted to very specific contexts
- Control of product liability issues e.g. adherence to international standards on product safety, nickel allergy etc; this requires alignment with hygiene issues

There appear to be no specifically crime-related requirements apart from those simply deriving from alignment with the wishes of bar management.

***Purpose – appeal to wider dutyholders***
There is relatively limited profitability appeal to bar companies from investing in protection of bag-owners through purchasing, installing and encouraging use of Grippas and pretty much any other security products or services. Company ethics and values may vary on their wider corporate social responsibility (Hardie and Hobbs 2005). This means that, in mobilising the bar companies themselves to fit Grippas, it's safest to assume that some external pressure may be needed to maintain their motivation. This could come from legislation for security and/or more immediate pressures from local police and licensing authorities in tackling a theft problem; or from central government (Clarke and Newman 2005b and see the work of the UK's former Design and Technology

Alliance against Crime[6]). Therefore it would be a sensible requirement to make the Grippa designs appeal to such people and organisations. Appeal could be supported by making the designs and their crime prevention rationale fully understandable, and aligned with principles that the dutyholders would support. Such an approach supports *climate-setting* (Ekblom 2011a, 2011c); also Scott and Goldstein's (2005) analysis of shifting and sharing responsibility for prevention.

Other public or private dutyholders with an interest in user experiences, and area reputations and images, are those responsible for the *local economy and tourism***.**

**Grippa's security niche**

Grippa, at face value, is a *security product* – that is, its *principal purpose* on which all the above builds is to *reduce the risk of crime* targeted on other entities and the people who own them. There is, however, some debate within the research team even now whether Grippa is fully a secur*ity* product or a secur*ing* product. This issue turns upon the emphasis to be placed on security versus safety (anti-trip), tidiness and keeping bags off the floor and hence clean, as part of a 'customer care' approach; and indeed, different stakeholders may have different uses for/visions of the same object, as described under purpose, above. But this tension as to intent has to be lived with, illustrating the limits to total clarity that any detailed consideration of purpose can introduce.

Being a security product means every aspect of the Grippa's design becomes relevant for security purposes, even desirability properties such as aesthetics, and hygiene properties such as sustainability. If neglected, these 'security inhibitors' could frustrate the security purpose as effectively as a failure of design of the primary security function itself. Clips of inappropriate style would not be bought and installed, hence could not reduce crime – unless the unopened boxes of clips happened to fall on passing bag thieves.

To go further, Grippa is a *fitted* product rather than a portable one. And it is designed to be *retrofitted*, although it could readily be factory-fitted or even evolve into a *security component* of furniture. For *marketing* considerations the Grippa is designed to be *versatile and adapt**able*** in fitting a wide range of furniture shapes and styles rather than *highly adapt**ed*** to a single niche. It does this, as all security products do, in conjunction with other physical entities and human agents in its *intended working context*, to be described below.

It's possible to take a wider perspective. Tables fitted with Grippas could be considered *securing products* whose primary purpose is somewhere to sit at, and whose secondary, security, purpose is as described in the previous section. The bars in which the fitted tables are sited, could be considered as *securing enclosures*, particularly if the Grippas are combined with *security communications* and *securing practices* of bar staff.

***Rival occupants of the niche***

Other products have occupied the same niche as the Grippa.[7] The Chelsea clip (Figure 9.2) is an earlier, police-designed equivalent which in fact stimulated the development of the Grippa, through its manifest failure to be used, and limitations of design. Failure to be used was evidenced by observation that in an entire street (Upper St, Islington, London) containing many bars which had previously been intensively fitted with Chelsea clips on police initiative, hardly any were in use. A similar picture emerged in more recent observations in a venue at London's Victoria Station.[8] Over the three months and 62 sessions of on-site observations conducted by the research team (before and after installation), just one of these Chelsea clips was observed in use by customers, compared with 246 bags hung on Grippa Clips over the two months of post-installation observation. Design limitations centred on weakness and breakage of its jaws, limited gape and (being positioned right beneath the table top set back from the edge) invisibility to users.

[Figure 9.2 about here]

**Figure 9.2 Chelsea clip**

*Portable* security products such as the prize-winning KeepSafe designed by CSM student Sara Bellini[9] serve an equivalent purpose and by similar direct preventive mechanisms to the Grippa, only they are carried and fitted, by sliding onto the edge of the tabletop, by the bag-owner.[10] The advantage is that they empower already alerted, informed and motivated users, so are more likely to be used, and used well and successfully. The disadvantage from a societal perspective is the limitation to the security coverage of tables and bars – unless such products become very popular most bags will remain unprotected.

**Mechanisms and technicality – how Grippa works and how it's made and operated**

We now shift perspective from purpose and security niche to how the Grippa is intended to work (the security function – mechanisms of prevention, with purpose) and how it's made and operated (technicality). As noted earlier, the preventive mechanisms and their technical realisations are here described together for convenience and economy, but other arrangements could be adopted. In this respect it should be noted that SFF is more of a language for articulating ideas than a rigid structure.

On preventive mechanisms, before describing how Grippa works to intervene in the causes of criminal events, we must first describe what it works *on* – in other words, bag theft itself. The focus here is on patterns of theft, the nature and unfolding of the theft events, and the causal mechanisms that underlie them. *Preventive* mechanisms themselves broadly fall into two categories. There are those which directly underlie the *intervention* (how the Grippa and associated communications materials, once deployed and used, influence and constrain offenders); and those which act indirectly, through *involvement*, specifically *mobilisation*, of other people and organisations to undertake crime prevention tasks and roles. Some of these tasks and roles amount to *implementing* and *sustaining* the intervention – it's people like bar managers who choose to install the Grippas, and bag-owners who may use them to frustrate the thieves.

On technicality, this relates to how the causal *properties* of the Grippa, which enable the above physical and social mechanisms, are realised through *materials* and *structural features*, and *manufacture, deployment* and *operation* in service.

***The theft problem in bars – nature and causes***

Here we summarise empirical findings and other knowledge on bag theft in bars. This is derived from three sources: an analysis of police records; a review of bag theft problems and solutions; and practitioners' knowledge of criminals and their techniques gleaned mainly from police crime prevention design advisors familiar with the problem. Our own practical experience in designing and trialling the Grippa clips also involved some thinking, and play-acting, thief (user-centred design fashion which gave additional insight.

We start with the basic nature and patterns of the bag theft problem, then move to coverage of perpetrator techniques and scripts, to script clashes between thieves and bag-owners, and finally to wider consideration of the situational factors conducive to theft, that the techniques and scripts have (co-)evolved to exploit and to cope with. A fuller analysis would go on to explore the wider *opportunity structure* (e.g. Clarke and Newman 2006) of bag theft in bars (covering for example the factors that make for availability of bags full of rich pickings, inattentive owners in crowded places and so forth). From the point of view of the Grippa designers, focusing on the immediate circumstances of theft, opportunity structure is a backdrop they simply have to live with. However, it becomes important when contemplating marketing issues for eventual production models of Grippa (how many bars are high-risk, and in what kinds and clusters of location?), and any future *changes* in the structure (e.g. will counter-terrorism pressures cause good quality CCTV to be installed in most city centre bars?).

*The pattern of theft of bags in bars*

Sidebottom and Bowers (2010) describe the pattern of bag theft in the bars that were the subject of this case study; the findings were fed into the design of the Grippas and the strategy or their placement. (More generic material on the problem is in an associated COPS paper (Johnson et al. 2010) and www.inthebag.org.uk.) This was based on analysis of police records of 1023 bag theft incidents during 2005-6 in 26 bars from the one company in central London, UK, and 317 customer surveys conducted in 14 bars of the same chain. For design-related considerations, a major aspect of the analysis was the *indexing* of crime risks within venues by appropriate denominators: number of seats, number of customers or number of bags per bar; and identification of where *within* bars bags were at greatest risk. Among crime pattern findings of interest here are that bags were most at risk when placed over a chair back or on the floor – hence the importance of clips keeping bags to the front, off the floor and close to personal defensible/surveillance space. Also of relevance were the findings regarding bag-owners' failure to undertake an effective crime preventer role. While the surveys indicated that the public knew which bag-stowing locations were risky, their bag-stowing behaviour seemed at odds with this, indicating that alerting, informing, motivating and empowering customers would be an important part of the preventive design strategy.

*Perpetrator techniques and scripts*

Theft is about illegal possession of property and the often-stealthy transfer from legitimate owner to thief by which this is accomplished. In the case of theft of bags from people seated at tables in bars and similar venues, the bag and/or its contents are the loot, and the transfer is accomplished by various *perpetrator techniques*. The sequence of tasks that the offender has successfully to accomplish in the course of applying the technique, is the *script*. Various additional *resources*, such as tools, props (such as coats or maps used to obscure the bag-owner's view) or skills, may be deployed. For the purposes of this project, knowledge of these techniques was obtained mainly by interviews with police officers and reading of other research; crime reports

rarely contained sufficient detail and in this instance there was no provision to interview offenders direct.

The perpetrator techniques that we are aware of centre on stealthily removing either the bag or its contents, when the bag is not actually on the owner's person (where presumably it is safest). The thief may sidle up to the table where the victim is seated, and surreptitiously slide or hook the bag, often with their foot. The bag is moved till it is out of the view of the owner, or at least so it is now in a position where the owner (wrongly assuming it is someone else's) will pay no attention if the thief reaches down and picks it up. The thief must also avoid attracting the attention of other customers or staff, who might detect what they are up to and warn the target bag-owner or challenge the thief.

As part of the wider script the thief obviously must:

- Select a promising bar
- Enter and quickly assess whether this is a good or bad venue for theft
- If good, blend in with customers to avoid attracting attention (which may be further complicated by having to find ways of plausibly avoiding buying drinks every time they enter a bar for professional reasons)
- Scan for attractive bag/bag-owner combination (attractive bag can be understood in terms of the perceived ratio of desirable items to unwanted 'bycatch' such as unsaleable clutter within the bag)
- Approach, displace bag, pick up bag, carry off bag to toilets where it is plundered and dumped; or directly leave bar with bag and/or its contents; alternatively, steal *from* bag in place on floor or more likely, on side or back of chair
- All this should preferably remain undetected until a safe period of time has passed
- Leave bar

Thinking thief, the script is likely to differ in detail, if not in main sequence, depending on how busy the bar is.

*Bag-owners' scripts*
Bag-owners also have scripts, which may or may not have an explicit crime prevention aspect. Our knowledge of these derived from our own experience as bag-owners in bars, plus informal observation of others supplemented with information from the customer surveys. The basic script is about:

- Finding a suitable bar
- Entering and scanning for attractiveness of venue and/or customers, and for space to sit
- Deciding to stay

- Perhaps locating a table and 'reserving' it with clothing or even the bag whilst buying a drink/food
- Sitting down, perhaps in company
- Placing bag in convenient location
- Occasionally leaving seat (buying drink, visiting toilets) and eventually leaving bar, hopefully with bag and contents.

The bag-owner may consider bag security at some time, whether in selecting a table/seat or in placement of bag – although our customer surveys found crime prevention to be a comparatively low priority. The detailed placement of the bag may be at the owner's feet, on their lap, on the table or on the side or back of the chair (Sidebottom and Bowers 2010).[11] In both table selection and bag placement, security is just one among many considerations, and constraints of physical configuration and crowding etc may limit choices.

*Script clashes*
Script clashes between thief and bag-owner in this situation are the 'pivots' on which interventions operate, where the designer seeks to favour the users, surveillers etc over the offender. Clashes include:

- Surveillance v stealth during approach of thief, taking of bag and leaving bar
- Challenge at the point of theft ('Hey, what are you doing with my bag?') v plausible excuse ('Sorry mate, it just caught on my foot – not much room here with all these people.')
- Pursuit versus escape once the intention or act of theft has been detected

*Immediate causal factors conducive to theft*
Various immediate causal factors contribute to the *Conjunction of Criminal Opportunity* (Ekblom 2010, 2011a)[12] for this kind of theft.

On the *offender* side,

- The thieves will be *predisposed* to offend and ready to do so either in advance, or by prompts from views of vulnerably-placed/attractive bags or items within bags.
- They will have plenty of bars within easy travelling distance of their *presence* (otherwise the bars will have no legitimate custom).
- Offenders will have various *resources*, especially perpetrator techniques and scripts and also some courage. Other emotional resources might serve to maintain an inward and outward professional cool. Still other resources and techniques may include dressing to blend into the clientele of the facility (e.g. city banker types), minimising suspicion. (Offenders may work in pairs or groups, not specifically taken into account here.)

- Offenders' *perception of opportunity* relates to of risk of harmful events (arrest, embarrassment, beating up), effort/cost (emerging empty-handed, wasting time/opportunity cost) and reward (rich pickings from bags).

Several *situational* factors tilt the balance of the script clashes in the thief's favour.

- The *target property* which the Grippa is intended to secure is of course the bag/s of the customer. The bag is usually just the container for the ultimate target – cash, phones, keys, laptops and other personal hot products (Clarke 1999) which are attractive to thieves – though thieves often take the entire bag, and pick over the contents in a safe place.
- The *target persons* are the bag-owners. These are usually unable, unaware or unwilling, to effectively perform the task of protecting their property well; in many cases they will be acting more as crime *promoters* than *preventers* (we could at least consider them 'diminished preventers'). The owner either a) leaves their own bag in a place where they physically cannot guard it by sight or touch (e.g. under the table, hanging on the back of their chair), or b) if guardianship is technically possible, have their surveillance capacity diminished in various ways. This could be by distraction from conversing with friends, watching sport on TV, participating in pub quizzes; by generally losing vigilance due to fatigue, cognitive overload of noise, music etc, and alcohol; or by slipping into a 'here's a place where I can relax' mindset. They may be uninformed about the degree of risk – and not empowered to recognise criminal attempts, e.g. unaware of perpetrator techniques such as hooking. They may find challenging a potential offender in ambiguous circumstances embarrassing. They may be tourists with limited command of English and hence perhaps relatively ineffectual at detecting and/or responding to crime when it happens.
- Third-party customers and bar staff might also act as *preventers*, looking out for, and responding to, the theft of someone else's bag. But mostly they are constrained and incapacitated in similar ways to the target bag-owners. To the extent that the facility benefits from social cohesion (e.g. a 'local' pub where regular customers know one another and might undertake collective protection) they will be motivated to intervene. This could be before the event (pointing out an insecure bag), during (shouting a warning, supporting a challenge) or after (giving chase). In the venues studied there was notable variation between and within bars (depending on the staff) as to whether staff routinely intervened to alert owners that their bags were placed in risky positions.
- The *enclosure* often has many criminogenic properties, often functional ones from the offender's perspective (note the '-ables and –ibles' – see Ekblom (2011d) for new ways of describing environments relating to CPTED principles):

- It is publicly accessible, giving offenders easy entry, whether as planned crime sweeps or casual visits where crime opportunities sometimes present themselves.
- Conditions are often unfavourable to surveillance by *any* party who might act as *preventer* – owner, other customer or bar staff: it may at times be obscured by crowding or barriers and unevenly lit. Crowding supports the plausible excuses of offenders already described.
- Crowding may diminish the owner's scope to challenge invasions of space because people must stand close to tables.
- Keeping track of who is coming and going, and what their intentions may be, is difficult. The enclosure may be *enterable and leavable* by multiple street doors, without access control, hence escape may be easy. An analysis of seating positions hardest hit by bag theft in one bar (Smith et al. 2005) showed these were along the interior path from one street door to the other, and not concentrated (as customers interviewed had predicted), right beside each door ready for a quick entry, grabbing of bag, and equally quick exit). In some cases the bar tables may be outside – either in an outdoor enclosure or on the street in the *wider environment.*
- From a practical implementation perspective, it's not possible to economise by targeting only high-risk tables for installation of Grippas, deterring thieves from just the most favourable locations to attack. This is because bar furniture is often moved around (e.g. to accommodate dancing sessions), and the Grippa-fitted tables could find themselves next deployed in a low-risk position, leaving the high-risk positions deprived of protection.
- The sample of London bars studied demonstrated the classic 'J-curve' distribution of 'risky facilities' (Eck et al. 2007): a few of the bars accounted for much of the total crime. Overall, the 'rich pickings' contents of the enclosure and any deficient security levels may cause any one bar to become a *'crime attractor'*, a location which offenders actively seek out because of the opportunity it provides in terms of limited risk of harm, limited effort and good reward (Brantingham and Brantingham 2008; Clarke and Eck 2003). Even the routine presence of many people passing through a busy facility for mainly non-criminal purposes may act as a *'crime generator'* due to the casual conjunctions of opportunity it engenders.

***Grippa: security function***

Function is 'mechanism with purpose'. Having described the nature and causes of bag theft, we now set out the security function of the Grippa clip that is designed to prevent it by interrupting, weakening or diverting mechanisms of crime causation. We first cover the basic function – how Grippa is intended to *work* – in terms of intervention mechanisms that work *directly*, and those which work by *mobilising* bag owners and

others to use the Grippa or otherwise support its use. In both cases we consider the issue of minimising any criminal *harms* that emanate from Grippa itself or mobilisation strategies. We then consider the *supportive* security functions that protect and extend the basic one; meeting *hygiene* requirements; and meeting the '*desire'* purposes and requirements of bar owners.

*Basic security function*

The Grippa clip is fundamentally intended to work by preventing *removal* of the bag – by *anchoring* it through the bag handle/s to a table that, through weight and bulk, is itself difficult to remove or cut. The design requirements for this are simple and obvious. But consideration of the detailed mechanisms reveals greater complexity, and – a common characteristic of preventive methods (Tilley 1993; Ekblom 2002) – parallel possibilities.

The Grippa is intended especially to make *stealthy* removal difficult and/or dangerous to the offender, by:

- Requiring hand movements which are visible to owner and to other people, and which are unambiguous in revealing their intent to release and remove the bag. The thief's attempt to disarm the accusation with an excuse, is itself disarmed.
- Requiring those movements to be made close to the owner, which in turn violates the owner's personal space, making it psychologically uncomfortable for the thief, and more likely the owner will spot and be sure enough of what is happening, within their 'personal defensible space', to feel comfortable challenging the move.
- Requiring a fiddly, hence slow, movement which deters and discourages snatch thefts.

These are *real-time* preventive mechanisms, albeit dependent on *advance installation and use* of the Grippa. But they are only part of the story, because they have to work *differentially*, i.e. discriminating between thief and legitimate owner in terms of their scripts and requirements. (Simply blocking the removal of the bag directly would render the Grippa unusable by the owner.) Such discrimination must rely on some *difference* between owners/bag-owners and thieves. It operates in two ways, biasing the script clashes noted in the previous section, to favour the bag-owner:

- Making it physically difficult for the thief to release the bag from anchorage whilst physically easy for the owner to both secure and release it.
- Making movement, and intention of movement, obvious to all onlookers – which is dangerous for the thief but of no consequence for the owner.

Both are realised through a simple difference in *position* relative to the anchor release-action of the Grippa. The Grippa design and its installation are together arranged so the bag-owner occupies the only position from which successful release can be easily achieved. How far this discrimination can be blunted by the thief acquiring skills or developing tools is unclear.

Besides *making* bags secure in *real-time* terms, the Grippa has to send *deterrent or discouraging messages* to the thieves *in advance* of the attempt. These have the advantage that the criminal attempt doesn't proceed as far as potential damage and confrontation. The messages may work at different stages of the thief's script: seeking and entering bars; on entry deciding to abort or stay; seeking likely tables/targets; and moving in on the one selected.

- Grippas may act by their presence alone, suggesting the bar is a security-conscious venue. This may deter and discourage the thief from entry whilst attracting (or at least having no influence on) the legitimate bag-owner. This may be achieved by the salient visibility of the Grippa, the configuration, and the wider security system centred on the bag-owner. However, deliberate s*emiotic* mechanisms and designs can be important here (Whitehead et al. 2008). The Grippa must *look* physically robust in its grasp and its anchorage, and to be difficult to release bags from, at angles other than those available to the owner. It must also *appear* to be obviously within the owner's personal space and visual field. The bar as a whole must *look* as though staff are paying attention to who is coming in and out.
- *Adjunct communications*, e.g. on posters, can supplement this message to thieves. Simultaneously, they can gain attention, acceptance and trust of customers whilst reassuring and mobilising them (see below).

In *technical* terms, various prototype clips were developed to realise both the basic anchorage to the table/support of the bag, and the first two of these discriminatory mechanisms.[13] In all cases, obviously, the clip had to be fixed to the table. The material had to be strong enough for a fairly compact clip, and any individual parts, to take the load of a heavy bag.[14] Metal was therefore used rather than the plastic of the Chelsea clip. (Other advantages of metal to set against its greater cost include that it is more robust looking and more durable.)

Basically two physical configurations for discrimination were created, which differed in *operation*.

- One used a simple, one-piece 'convoluted path' through which the owner had to thread the bag to get it on and off the clip.
- The other was a hinged gate which was easily pushed into the interior space of the clip by the bag handle. The handle having passed beyond it, the gate fell back to the closed position, where it was held by a spring or gravity against the body of the clip (gravity was preferred due to fewer components to manufacture/assemble, greater durability and less cost). Together, the gate and static part of the clip formed a closed loop. To release the bag the gate was manually lifted whilst the bag handle was manoeuvred out.

In both cases the release of the bag handle was intended to be easier to accomplish and more noticeable when the user was close to the clip and sitting or standing in the

legitimate owner's position; and harder to do so stealthily, or at all, when attempted from any other position.

*Minimising criminal harm from Grippa itself (1) – avoiding inadvertent increased risk of bag/contents theft*

It is not impossible that well-meaning crime prevention designs can unintentionally *increase* the risk of the crime they are intended to prevent. This could happen with the Grippa, for example, if it held the bag in an upright position where it was easier for the thief to scan the bar for likely targets, and also to 'dip' the bag's contents. (Placing bags in a more standard configuration rather than willy-nilly on the floor or the bag-owner's lap could facilitate the development of a particular script and even tools such as hooked wires.) As already suggested, in some circumstances the Grippa might lead owners to stop using their laps, which may be safest of all.

At another level, if the Grippas in a bar seem to be ignored and unused, and communication materials lie discarded on the floor, this could encourage thieves by indicating that neither bag-owners nor bar staff believe in the value of the Grippas, care greatly about security, or believe that 'natural' security is adequate. So perhaps having Grippas that are not used could be *worse* than having none at all.

*The mobilisation dimension – working with the bag owner as crime preventer*
The diverse *motives* for the mobilisation of bag-owners, bar management and manufacturers/marketers were already covered by listing these agents' purposes and requirements for design. The focus in this section is on *mobilisation* – how, through design, the Grippa itself, and adjunct security communications, influence the people *immediately* involved in the crime situation to act as crime preventers. This is important because Grippa is not an 'install and forget' kind of design, like the immobiliser in cars. For the above preventive mechanisms to work successfully, they almost all require the bag owner to use the Grippa, and to use it properly. (The exception is deterrence of the thief through mere *perception* that the bar is security-oriented.) The owner is therefore a necessary functioning element of a security *system*; *mobilising* the owner to assume that function is a vital action in which design plays an important part. Yet use of Grippas is not mandated by the bar – in Chapter 10 Sidebottom et al. refer to this as a *discretionary* intervention, as is their Trolley Safe product.

More broadly viewed, the bag-owners' tasks that Grippas are intended to mobilise include the following:

a) Possibly seeking/choosing bar fitted with Grippas
b) Seeking table/seat with free Grippa
c) Deciding to fix bag to Grippa
d) Fixing bag to Grippa/arranging bag so it is out of way and unlikely to spill contents/ gape/ trail on floor

e) Possibly arranging body to limit angles of approach available to thieves and facilitate surveillance
f) Surveillance of bag and any approaches to it
g) Response if required (protectively grasp bag/challenge possible thief)
h) Remembering/deciding to release and take bag on temporary departure (e.g. to bar, toilet, outdoor smoke – possible conflict with convenience and with desire to mark possession of seat) and permanent departure
i) Releasing bag and not forgetting to take it on permanent departure

The process of mobilisation, as Chapter 2 described, can be characterised by the CLAIMED framework. Once the preventive tasks or roles are Clarified, and appropriate people Located to take them on, those preventers (here, the bar customers/bag-owners) have to be Alerted, Informed, Motivated, Empowered and Directed to *use* the clip. Likewise, the bar staff to *support* the use of the clip by the bag-owners. Prevention tasks may also be undertaken by other customers, bar staff and the installers of the Grippas.

The Grippa design must support these tasks. In a sense, under Direct in particular, Grippa can be said to have its own script for the intended user. As a corollary, it must not *de*-mobilise – lull, confuse, deter/discourage, inhibit or misdirect the owner. Each of the above tasks has a failure mode which may be influenced by other designable properties of the Grippa and/or of the context.

Alerting and Informing the bag-owner

- Our observations and interviews concerning the lack of use by bag-owners of the Chelsea clip, strongly suggested that a major mobilisation requirement was simply that the Grippa clips be *visible* from sitting or standing positions. (Chelsea clips tend to be placed several inches in from the table edge, not only rendering them invisible but subjecting the bag-owner's fumbling fingers to possible encounters with deposits of chewing gum or worse.) They were therefore designed, where the position of table legs allowed, to be installed at the very edge of the table. An alternative high-visibility position considered was on the table top, but this was rejected as interfering with desirability requirements of bar management, including stacking, cleaning, not irreversibly affecting the appearance of the table-top, and avoiding spilling drinks.
- The *colour* of the clip was also considered, in an issue we called *'blend or bling'*. In other words, should the clip aim to match completely the style of the bar furnishings (e.g. brass in a traditional environment), or should it be coloured to deliberately stand out (e.g. fire-engine red, which also connotes risk)? In the end, both variants were produced, which would facilitate attunement to market preferences.
- Given the importance of the 'awareness' issue we considered it necessary to supplement the clip's own elementary 'self-alerting and -directing' property (the script it calls forth from bag-owners)[15] with *communications products*, including wall posters and bag-shaped cardboard hangers containing 'use me' messages to fit on the clips (Figures 9.3, 9.4).

[Figures 9.3 and 9.4 about here]

**Figure 9.3 Poster**

**Figure 9.4 Card hanger**

Motivating the bag-owner

- The main motivator was intended to be the bag-owner's concern to protect their own property. A robust *appearance* for the Grippa was considered necessary beyond what was adequate for a robust *performance* and technically, this was achieved by stout looking hinges and closely-fitting gates.
- To some degree we attempted to make the Grippas a physical pleasure, even fun, to play with.
- Much design effort was devoted to minimising any inherent *disincentives* to bag owners to use the Grippa, such as awkwardness to use, as under Purpose/desirability requirements above. One concern was not to make it look too *gendered* – i.e. indicating a feminine or masculine kind of thing to use. Another issue raised by some customers interviewed was that of *forgetting one's bag* on leaving the bar. Whether this risk would be made more likely by hanging bags on the Grippa rather than leaving them on the floor is only testable in the field and under different conditions of crowding. But requiring the owner to take positive action to secure the bag, then having it raised up in view and in many cases pressed against their leg, were felt to be more conducive to remembering. However, in the final analysis this was a matter of the bag-owner's *perception* rather than what the designer knew to be true.

Empowering the bag owner

- The clip in its entirety was intended to empower bag-owners to guard and retain their property. The idea was to work *with* the bag-owners and their existing security practices rather than to entirely supplant these and make the whole security system totally product-dependent. This issue reappears below (under 'mis-mobilisation').
- The clip was designed to be as *self-evident in purpose and utilisation* as possible; making it mountable side-on to the user was thought to better reveal its workings without reduction in its direct preventive function. Nonetheless, for versatility, all models were designed to fit either pointing sideways or outward from the table corner.
- Self-evidentiality was however supplemented by use of the card hangers, as described, in the shape of a bag hanging from the clip. Unfortunately these were so often dropped by customers on the floor that the bar staff ceased to deploy them. The final design of the clip was therefore given the option of a raised 'hanging bag' silhouette on the body of the clip itself (Figure 9.5)

[Figure 9.5 about here]

**Figure 9.5 Grippa with bag logo**

Directing the bag-owner

There was no intention forcibly to direct the bag-owner to use the Grippa, or to use it in a specific way, beyond the simple constraints of its securing action (the bag-owner simply had to use the gate or convoluted track in the way intended, no alternative action was possible).

*Minimising criminal harm from Grippa itself (2) – avoiding mis-mobilisation of bag-owner*

Some of the bag-owners observed and interviewed were highly alert to the risk of bag theft, and consequently held their bag on their lap or hugged it to their body. In the team's opinion this actually offered a better security solution to those individuals than did the Grippa; analyses of recorded crime data in our sample of bars found incidents of snatch theft from the person to be rare. Therefore, we were careful not to make the messages in the posters too single-mindedly directive.[16]

*Mobilising other customers*

Although they may not have such a good view as the bag owner, and may or may not be motivated to attend and respond, the unpredictability and the 'observation from many angles at once' considerations may influence the offender's decision to steal. As said, this mechanism is more likely motivated and empowered in a context of social cohesion such as a bar with 'regulars'.

*Mobilising bar staff and management*

*Bar staff* in particular may or may not have the incentives to protect the property of their customers – this will depend on the policy, supervisory practices and reward structure operated by management at all levels. They may otherwise simply not have the time or attention space. They may or may not be alerted and informed about, or empowered to tackle the bag theft problem – its extent, nature and how to respond. This may be exacerbated by poor English, and a rapid rate of turnover that allows individuals little time to familiarise with the bar layout, or to be specifically briefed about bag theft and bag security. Ideally the Grippa clips, in the right managerial context, might serve as a focus for bar staff to undertake surveillance and to give preventive advice to bag-owners, including pointing out the theft risk and indicating the presence and use of the Grippas themselves. In terms of being designed to motivate *company management*, apart from avoidance of undesirable properties, little that is positive can be achieved by design of the Grippas. One exception was ensuring that the Grippas could be re-used (both in terms of versatility of fitting and style, durability, and ease of removal and re-installation), which also had a sustainability benefit. Again, though, it's conceivable that in the right *climate* set by police, politicians, media and so forth, the Grippa can act as a focus for management to take an active interest in the security of their customers and to help alleviate a national crime problem. In Barcelona, where staff routinely alerted bag owners when their belongings were placed in risky

locations, Grippa usage rates were found to be much higher. This relates to favourable conditions to activate the causal mechanisms described.

*Mobilising the installer*
In the commercial context of the bar, one assumes that alerting, informing and motivation are not issues for the installer, who is likely to be working at the bidding of the bar management. Empowerment and direction remain relevant. In the Grippa trials, all clips were installed by our own team members, using drills and screwdrivers; we have no direct experience of the task of guiding and directing other installers. But accurate positioning relative to the inside/underside corner where the table leg met the table top was easy, and in theory easily-communicated.

*Mobilisation failure*
This chapter has not focused on what actually happened with the Grippa clips, but for the record there were several notable failures of mobilisation, climate setting and partnership (all tasks under 'Involvement' in the 5Is process model of crime prevention – Ekblom 2011a). In the trial bars, few bag-owners used the Grippas (facilitated by their design being discretionary rather than mandatory in use), the bar staff were not supportive and for reasons connected to the 2008 financial crisis more than half-way through the study the bar company ceased to collaborate. Such failures were not inevitable as they did not occur in pilot trials in Barcelona, and more recently bag-owners are using the clips, and staff *are* supportive, in a branch of a major cafe chain at a London mainline station. These failures and successes are described in Ekblom (2011c).

*Grippa – supportive security functions*
Chapter 2 stated that security products have to be viewed in two ways: *as-object* as well as *in-function.* The latter covers possible events where the product is doing what it was designed to do – protect some other person or entity. Here, designers seek to protect against some inherent *failure* of that function, for example due to the bag jamming in the clip or the offender somehow disabling it. The former covers possible events where something entirely *incidental* to its security function (e.g. accident, wear and tear, and criminal misdeeds like theft of Grippas for scrap metal) causes that function to be lost; other consequences to be incurred (e.g. repair, replacement or reinstallation costs of security product); and even other crimes to be facilitated. We cover these dimensions in turn.

Grippa as-object – basic self-protection against accidental damage and wear, and incidental criminal misdeeds
No specific design responses were made for these purposes. With *mishap* (which could include accidental detachment from the underside of the table, or crushing during stacking of tables) the Grippa's robustness in supporting heavy bags was assumed to give sufficient protection. Likewise the surface coating of the Grippa was robust enough to tolerate frequent scuffing and cleaning.

With criminal misdeeds targeting the Grippa for *misappropriation* (e.g. theft of materials) or *mistreatment* (e.g. scratching or bending out of shape), its location in a protected environment was thought to make this unlikely. (With Grippas on outdoor tables, brass versions could be at greater risk from theft for scrap metal value, so screws requiring specialist tools to unscrew them might be worth considering.)

Another crime the Grippa might facilitate could be terrorism, where a bag containing a bomb could be left hitched to the clip. This possibility of *misuse* was again judged unlikely and the *extra* facilitation of the crime was felt to be little or none – after all, it would be easy enough to leave a bag on the floor in the absence of Grippas.

Risks of *misbehaviour* might just about be envisaged in bars with younger clientele – for example stag-party pranks involving tying people's belts to the Grippa – but these possibilities would, we judged, be neither more likely nor more harmful than alternative misdeeds in the absence of the Grippas.

Grippa in-function – self-protection against *unintentional damage* in intended use
Such damage could happen for example through overload from a very heavy bag, or in forcing open the clip to take wider bag handles than it had been designed for. Robust construction of the body and where relevant the gate and hinge of the clip was the obvious remedy. However, this had to be traded off against economy and sustainability in terms of cost and use of materials.

Grippa in-function – advanced protection against *criminal countermoves* aimed at disabling or bypassing the Grippa's security function

Countermoves *disabling* the Grippa seemed unlikely. The intrinsically simple construction and operation of the Grippa leaves little scope for this. This would involve cutting, bending or jamming it open, actions unlikely in the relatively secure enclosure of the bar, and indeed likely to be more obvious than moves to release the bags themselves. And where such disabling was done in advance of bag-owner use rather than in the immediate course of theft, the bag owners would surely be unable or unwilling to hitch their bag handles to the clips in the first place. *Failure of, or tampering with, the security function* would be fairly obvious to the bag owner if it ever happened. This would mean at the very worst, the loss of protective capability rather than the more serious risk of bag-owners trusting their bags to something which offered only a false sense of security. Incorporation of special *tamper-evident* properties was therefore not considered necessary.

A tactical-displacement shift from removing the entire bag to *dipping its contents in situ* might be possible: the hanging position might facilitate entry e.g. by bracing the mouth of the bag against hand movements so that fingers could slide in more easily. These actions would theoretically be possible but would require thieves to undertake a great

deal of close-in searching and scanning activity to identify suitable bags in suitable positions. Relative to the rather straightforward perpetrator technique of simply hooking or sliding the loose bag along the floor, this alternative method would very likely reduce the reward rate and increase the risk that the thieves are spotted. However, who knows what skilled professional 'dips' might achieve? Ultimately, only prolonged field experience would tell but in immediate practical terms, caution is recommended in locating Grippas on stand-up 'at the bar' positions.

Countermoves *attacking other parts of the secure system* might be more likely. *Cutting bag handles* might be contemplated, but (weak plastic bags apart) offenders would have to carry a sharp blade, which carries various legal risks. They would have to find means of cutting stealthily, close to the bag owner's legs and lap, which would be just as intrusive as unhitching the handle. They would also have to have a hand available to catch the bag in case it dropped or slumped to the floor. The chances of doing this without radiating suspicious sights and sounds seem minimal, and the possibility of development of skills and tools to cut the large variety of bag handles, which are mostly designed to be tough, are limited. Gardening secateurs would be concealable and might possibly work, but if challenged there would be few excuses with which thieves could respond.[17]

Countermoves could also *attempt to obscure or distract surveillance* by trailing clothing over the table, or even spreading a map on the table when asking for directions. This could also serve to *acquire permission to enter personal space*. Other means of distraction might be employed, especially if a co-offender is involved. Counter-countermoves to these might include using sound – making the Grippa emit a noise such as a mechanical squeak or click when the bag is being released – though this is unlikely to work well in a noisy bar.

More strategically, if there were significant possibilities of *displacement to other forms of theft within bars and similar facilities*, there would be little point in bars investing in Grippas to close off this particular opportunity alone. To a large extent this possibility could only be tested by field trials. But it's worth noting that pickpocketing techniques are probably more demanding than bag-sliding and –hooking, where there is no personal contact – so switching theft methods from the latter to the former is 'uphill' in terms of skill transfer. *Displacement to other bars unprotected by Grippas or equivalent* might be thought 'not Grippa's problem'. But design and marketing can have a role even here, because designs with a broader appeal to different contexts and purchasers may well achieve greater area-level coverage of bars within displacement distance.

***Grippa technicality – meeting hygiene requirements***

Basic health and safety-type hygiene requirements addressed included, technically speaking, avoiding allergenic materials such as nickel, rough finish and risk of pinching or trapping fingers in the mechanism. The Grippas were arranged with the manufacturers working to the ISO 9001 quality standard. Damage to the Grippas from accident, wear or

criminal intent could conceivably leave projecting ends, maybe even sharp ones if the metal fractured. This was considered no more risky than any other accident to furnishings such as screens, coat-hooks etc, so *fail-safe* modes were not explicitly designed in.

***Grippa technicality – meeting bar management purposes and requirements***

As-object requirements already listed included safety, the cleansability and stackability of tables, and matching with décor and brand identity, and not irreversibly damaging visible surfaces on installation. Designing the Grippas to fit snugly beneath tables rather than awkwardly on top of them helped in most cases; safety was covered immediately above under hygiene.

In-function requirements were more challenging, since potential negatives of crime prevention for bar owners were finely balanced with positives. Solutions were as follows:

- Technically, installation/anchorage to the table was by just two screws, minimising damage to the table and making the fitting reversible.
- Placement and orientation beneath the tables were, as said under mobilisation, easily communicable to fitters, requiring no detailed instructions, although guidance on principles would be needed to cope with the widest range of furniture styles and construction. Technically, drilling and fitting was a quick and relatively undemanding task well within the capability of the kinds of carpenter or maintenance staff normally employed/contracted by bar companies. Each clip took no more than 2 minutes to affix, with up to four per table.
- What the Grippa and any adjunct media (such as hanging cards and posters) communicated to bar customers was understandably of some concern to bar management. Too prominent an emphasis on crime risk and the need to guard valuables was felt to be likely to deter custom, although the balance of concern (and the balance of pressure from the police) could shift in bars which were especially heavily-targeted by thieves. One approach as said was to emphasise the 'tidiness and safety' benefits of securing bags where other customers and staff would not trip on them or accidentally damage them. The message developed for posters was therefore a low-key one, e.g. 'bag hooks provided', 'where's your bag? Keep it close'.

**Summary SFF statement for Grippa clip**

A summary SFF statement for Grippa is as follows.

> The Grippa is **1** (**purpose**) designed to reduce the risk of *theft* of *customers' bags* in places like *bars and restaurants.* **2** (**security niche**) It is a fitted security product. **3 (mechanism)** it works by physical *anchorage* of the target bag in a configuration that is differentially easier to release by the bag-owner; by mobilising *usage of the product,* and the *surveillance and reaction* that it favours by the user/owner and others acting as preventers; and by *deterrence* through

> increasing the offender's perception of risk of being detected and caught in the act. These mechanisms are achieved **4** (**technicality**) by installation of a strong metal clip – the Grippa – on the underside edge of the table next to the leg, whose position, orientation and operating action enable the bag-owner to hitch and unhitch bags of a range of sizes, shapes and weights to the table whilst remaining close to their body and within their visual field; and which exposes the action to view. The Grippa is fixed to the table by screws, and operates (in the case of the spiral configuration) by requiring the bag handles to be threaded through an open gap, or (with the loop) by pushing the handles against a hinged gate which slips open to admit the handles and falls back under gravity to close the loop and retain them. Release with the spiral is a matter of back-tracking the hitching action; with the loop, the bag-owner has to lift the hinged gate whilst sliding the handles off the fixed part and out of the now-open gap of the loop. In both cases the Grippa and its positioning is such as to make operation *differentially easy* for the bag-owner seated or standing at the side of the table where the bag is hitched, and *difficult and with obvious movement and intent* from other positions. The mobilisation of the bag-owner is attempted by the highly visible position, bright colour, simple, convenient operation and indicator of function in the shape of an embossed hanging bag symbol.

It's interesting to compare the above summary rationale with the earlier one of the Stop Thief chair (Chapter 2). Although there are considerable and obvious differences in technicality, and linked differences too in niche and purpose, the underlying similarity of security function (purpose and mechanism) between such physically different products is quite striking. This ability to hold commonality and difference in structured tension is a strength of SFF.

The SFF summary is compact and reasonably self-explanatory, but in knowledge management/transfer terms it is only adequate for basic search and retrieval by designers and operational users such as crime prevention practitioners or security staff. It does leave out a lot of detail, and the research, analysis, reasoning and tradeoffs behind the final design. So in that sense it is only adequate for building a minimum of innovative capacity. But it does act as a retrieval document for the detail, and gives us an 'association' method for connecting, on any one of the four dimensions, with other crime prevention design problems and solutions.

**Conclusion**

Purpose, niche, mechanism and technicality have all been revealed as concepts which are simple in essence but complex in detail. This in some ways parallels the story of the Grippa clip itself, which is a simple concept, nevertheless needing to be realised as a high performance design, through a rather demanding design process.

A more generic point is that, even with this apparently simple instance of crime prevention we seem to be getting into the realm of *complex adaptive systems*, where

different agents, with diverse purposes, each perceive and adjust to changing states of the world they are in and to interdependence and interaction with each other. Intervention within such systems can lead to unforeseen outcomes, posing a particular challenge for designers to create security products which are capable of operating successfully in a range of poorly-envisaged or predictable circumstances.

SFF is not a checklist to be followed in a rigid, slavish fashion, but instead demonstrably appears to offer a vehicle for capturing, organising and retrieving a rich combination of knowledge from crime science and design practice; and a platform on which to tease out what are quite tangled issues. As the Grippa case study has demonstrated, there is an enormous amount that can be extracted and articulated from a systematic, in-depth account of the security function of a given product or system. From a practical design and crime prevention perspective the framework, and the material it seems able to capture and organise, both promise to help develop and build innovative capacity. SFF could, for example:

- Give would-be *clip-designers* the capacity to 'get smart quick' on their own designs, created to match their own, differing, contexts; likewise for *theft preventers* in general.
- Give the *designers of security products* in general a model and examples for undertaking design.
- In combination with the framework set out in Chapter 2, give a more generalised transfer of knowledge on how to research, think about and undertake the design of products, in the widest sense, with a security function. This could take the form of guidance for professionally mature designers, or educational material for design students.

The conceptual framework for supporting these applications is, arguably, on its way to being fit for purpose. The remaining, and major, challenge is to find language, formats, and media, that can transfer this knowledge in an efficient and appealing way, that structures, focuses and supports the vital design freedom rather than choking it. The quantity and complexity of the content is such as to pose a considerable obstacle both in terms of how many designers think, and the time and effort they are willing, or can afford, to put into acquiring the necessary knowledge and competence. This is a task... for communications and graphic design! One strategy is to develop a 'sliding scale' of materials: simple, perhaps heuristic, guidance at one extreme, leading progressively to subtle, sophisticated approaches at the other, aimed at designers who *specialise* in security – especially, but not exclusively, the rapidly-evolving *high end* of security as in cyberspace.

Although the language in this case study has veered towards the crime science side, rather than the design side, we hope that the intimate connection between these approaches demonstrates a clear move towards interdisciplinarity.

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**Notes**

[1] And see www.stopthiefchair.com. Accessed 03.03.11.

[2] www.grippaclip.com/wp-content/uploads/Grippa-Prototypes.pdf. Accessed 03.03.11.

[3] http://issuu.com/designagainstcrime/docs/6_grippa_bcn_english_1. Accessed 03.03.11.

[4] www.grippaclip.com/wp-content/uploads/Changes-In-Customer-Opinion.pdf. Accessed 03.03.11.

[5] Strictly, not all these positive and negative wants were expressed by customers, but it can be assumed from putting ourselves in their place and articulating unconscious need, that they do *not* want, for example, the table to tip on them dousing their laps with beer.

[6] www.designcouncil.org.uk/our-work/challenges/security/design-out-crime/the-alliance

[7] Reviewed at www.inthebag.org.uk/wp-content/uploads/2008/05/bag_clip_market_review.pdf. Accessed 31.05.11.

[8] www.designcouncil.org.uk/our-work/challenges/Security/Design-out-crime/Case-studies1/Stop-Thief-Chair-and-Grippa-Clips. Accessed 03.03.11.

[9] www.ahrc.ac.uk/About/Publications/Documents/DAC%20Brochure.pdf. Accessed 03.03.11.

[10] A range of such portable clips is reviewed at www.inthebag.org.uk/what-can-you-do/bag-holding-clips. Accessed 03.03.11.

[11] See also www.grippaclip.com/the-process-2/user-and-abuser-analysis/. Accessed 03.03.11.

[12] www.designagainstcrime.com/lists/conjunction-of-criminal-opportunity-classic-know-about-and-know-what/. Accessed 03.03.11.

[13] See www.grippaclip.com/the-process-2/design-evolution. Accessed 03.03.11.

[14] Paul Ekblom's infamous laptop-backpack, fully-loaded.

[15] See the penultimate paragraph of Chapter 2 on 'persuasive technology'.

[16] See www.grippaclip.com/design-outputs-2/communicatio-graphics. Accessed 03.03.11.

[17] Perhaps they could claim to have come to tend the pub's window-boxes.