RESEARCH ARTICLE

'The Rhino Horn on Display Has Been Replaced by a Replica': Museum Security in Finland and England

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Museums are an integral part of the cultural life of societies. As well as having intangible value, many collections may also have considerable financial value and present a temptation to thieves. Furthermore, threats exist from accidents, natural disasters, and vandalism, among many other risks that have to be taken into account when building up museums security measures. In recent years, high-profile art thefts from museums and even, regrettably, acts of terror have drawn attention to the vulnerability of museum institutions as sites of crime and catastrophe. In particular, balancing visitor enjoyment and accessibility of the exhibits with security can be difficult for many. Despite awareness of these concerns, museums security remains to date under-represented in museological discourses, perhaps in part because of its perceived pragmatic nature. Another reason may be the difficulty of discussing in a meaningful way information that is often confidential and sensitive. In this paper, based on research carried out in Finland and England, we aim to analyse some of the key issues for museums security, which, whilst observed in northern European settings, also have relevance for museums globally. We set this discussion against the backdrop of ethical considerations and present our methodology for gathering the data and for discussing our results in a way which is both sensitive to confidentiality issues and still of use to the wider security, museums, and cultural heritage sectors.

Background

In this paper we make an initial foray into the security challenges facing museums in two European countries: England and Finland. Both have wealthy economies and are members of the European Union (EU). Both countries also have active and vibrant museum communities.

Museums provide an important service for the cultural memory of societies and individuals, taking in both tangible and intangible cultural heritage (Yoshida 2004: 109–110). Estimates vary over the total number of museums in both England and Finland, affected by the constant flux caused by openings and closures of museums, as well as by continued debates as to what constitutes a museum in the first place (see, for example, Davies et al 2010), and therefore as to what is counted in official statistics. The Museums Association suggests that the UK as a whole (including England) has around 2,500 museums in total

(MA n.d.), and 1,315 museums in England were registered under Arts Council England's Accreditation Scheme as of June 2015 (ACE 2015). Meanwhile, Finland, with a significantly smaller population (just under 5.5 million, compared to almost 64 million for the whole of the UK as of 2013; Eurostat 2014), may have over 1,000 museums, of which only about a third are run as professional organizations (Museot.fi n.d.). **Table 1** shows the number and type of professionally run museums in Finland and the UK in 2013 and 2012 respectively, as estimated by the European Group on Museum Statistics (EGMUS).

The International Council of Museums offers a definition of a museum as being 'a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment' (ICOM 2015). This definition, which has been through several revisions since the original version adopted in 1946 with the formation of ICOM itself, tacitly indicates the importance of collections and of the need to make these available for the three goals of 'education, study and enjoyment'. These latter goals have been especially emphasised in recent decades, with Falk and Dierking (2013: 14) noting:

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Country	State-owned	Locally or regionally owned	Other publicly owned	Privately owned	Total museums
Finland (2013 figures)	19	208	9	86	**322**
UK[1] (2012 figures)	58	581	83	910	**1732**

Table 1: Museums in Finland and the United Kingdom (EGMUS 2015).
[1] Whilst the figures in this table include museums from Scotland, Wales, and Northern Ireland, the present study examined English museums only.

Whereas as recently as a generation ago most museums would have listed 'education' as a distant third on their list of institutional priorities, behind collections and research, these same museums would now be inclined to state that they are, first and foremost, centers for public learning – or at the very least, equally concerned about education, research and collections.

This emphasis on public learning does not detract from the museum's role as a repository for art and cultural heritage, and indeed roles and expertise related to conservation and archiving are integral to museum staffing. However, it does highlight the challenges for museums – not only to preserve and protect cultural material, but also to make it accessible and available to a variety of different audiences and their needs. From the point of view of security, this creates challenges in ensuring the safety of both the museum collections and museum visitors without compromising the visitor experience. Furthermore, the special, 'musealized' status of objects in museums – their selection due to a connection to a significant individual or as representative of communities, historical periods, artistic or craft styles, or scientific advancements (to name a few possibilities) – transforms them from mere objects into 'museum pieces'. Some objects, such as examples of fine art or jewellery, have an intrinsic financial value in any case because of their status as a rare object, the skill associated with their production (including possible association with a 'master' in their field), or the material from which they are made. An object's antiquity may also enhance its financial value. Many more objects, for example those connected to the social history of specific communities, are collected as examples of everyday life or particular traditional practices. Museums cannot preserve everything: 'much has to be left to oblivion and destruction. Therefore both our understanding of the past and the cultural and natural heritage we have created are results of cultural choices' (Vilkuna 2011: 24). The musealization process goes beyond the act of simply collecting: 'Objects that serve as carriers of information, after being musealized, become the core of museum activities' (Wan-Chen 2012: 20). This transformation through musealization, therefore, can enhance the cultural and scientific 'value' of a museum object to a greater extent than if it had not been acquired for a museum collection. Hence, if museum objects are lost or destroyed – be it deliberately or accidentally – the loss is far greater than merely that of their financial worth.

In 2015, both England (as part of the UK) and Finland had general elections. The new governments will doubtless make further changes to funding for museums. In England, the right-leaning Conservative Party won an overall majority. In Finland, a right-leaning coalition government was formed from three parties: the Centre Party, the Finns Party, and the National Coalition Party. Shortly after the UK's general election, a budget cut of £30 million was announced for the Department for Culture, Media and Sport responsible for funding, along with other contributors, the UK's 16 free-to-enter national museums (DCMS 2015; HMT and Osborne 2015; Sullivan 2015). In Finland the Ministry of Education and Culture is responsible for museums, providing around 40 per cent of their funding, with the remainder coming from local authorities, museum activities, and sponsors (Ministry of Education and Culture n.d.). Participants in the research that we discuss in this paper – namely interviewees from a small sample of museums in England and Finland – were understandably concerned about the future. In Finland, for example, the economy has been contracting for over three years (Rosendahl 2015). Budgetary decisions following the election were not announced at the time of writing, although the Finnish government aims to cut around €6 billion from its budget (Troy-Donovan 2015). The museum sector as a whole has traditionally complained of under-resourcing curtailing their operational and creative ambitions (e.g. Hatton 1989). Under even more straitened operating conditions in both countries, museums must make difficult decisions about their priorities. Preferred security upgrades may not be possible, and compromises are sought.

Opportunity plays a role in causing crime (Felson and Clarke 1998; Clarke 2012), and this is as true for museums as for any other setting. A survey of museums around the world suggested that one in four museums did not have up-to-date records of items in storage, one in three did not have clear management procedures in place, and one in ten had experienced object theft (ICCROM-UNESCO 2011). In practice, this suggests that the true extent of loss or theft from museums is unknown – if storage records are in chaos, it is impossible to keep track of missing items accurately. Interestingly, there is some evidence to suggest that museum collections are at greatest risk of theft from those who have the greatest access: in one example, the Australian Museum fell victim to an employee who stole over 2,000 artefacts between 1997 and 2002 (ICAC 2003). However, the *extent* to which thefts occur internally is less certain, although Mandel (2008) reports the FBI belief that 'about 90 percent of art thefts from museums are internal' and Peek (2011: 2) estimates that 'the probability of internal theft, by own staff, might be ten times as high as that

of external theft'. This would certainly be consistent with opportunity theories, but we must also remember that, by their very nature, museums provide public access to their valuable contents, thus potentially widening the net of individuals and groups with opportunity to offend. It is not usually practical nor desirable to suggest that we remove at-risk objects altogether. However, there may be other ways to protect our cultural heritage. We must also be aware that security issues within a museum are far more diverse than simply that of theft, with other security issues such as the safety of staff and visitors also coming into play. In the remainder of the paper we describe our methodological approach, discuss ethical constraints on both our research and the dissemination of our results, present our initial findings on the breadth of security problems faced by museums, and discuss the current methods of tackling security issues. Finally, we identify a need for further solutions.

Methodology

The goal of this research project was to provide an exploratory study of the different security-related issues pertinent to museums of different sorts within two northern European countries: England and Finland. We interviewed 13 members of staff, from four museums in each country (eight museums in total), and digitally recorded the conversations. Rather than working through a rigid list of questions, we used a semi-structured approach (Cohen and Crabtree 2006), guided by themes such as organizational structure, known incidents, and external networks and contacts. This way, the interviewee retained some control over the issues they felt were pertinent to discuss, including – significantly – how they chose to interpret and define 'security' itself. Reflecting on our own roles in this process, as a criminologist and a museologist carrying out all interviews jointly, we noticed an interesting outcome from working together in this way. Not only did carrying out the interviews together mean that we were both privy to the content of each interview first-hand, but we noticed that our different interests and disciplinary backgrounds led us to notice and ask about different aspects during each of the interviews. We believe this was an extremely beneficial feature of the approach that we adopted.

We selected our case-study museums in a way that would enable us to glean data from a broad spectrum of museum types. We considered the following criteria in order to inform our selections:

· Governance. The selected museums represented a range of different models for governance, ranging from national-status museums through to those run by local authorities, universities, or private foundations and charitable trusts and to volunteer-led organizations.
· Collection. Although we do not discuss the nature of the different collections of participant museums in this paper for security reasons, we took care to include museums with a wide range of different types (and sizes) of collections.

· Location. Although limited to the national boundaries of Finland and England, the selected museums were found in a range of different urban or rural settings, ranging from city centre locations to suburban venues and locations set in the countryside.

The staff we interviewed had been employed by their organizations for an average of 10 years. When contacting our selected museums, we explained that we wanted to interview staff representing a diverse range of roles at the museum. In practice, the roles in which the staff willing to be interviewed were employed were typically to do with security, operations, curating, conservation, and/or overall management. Only one of the interviewees at our selected museums was in a role devoted entirely to security, although several noted that security was a key component of their day-to-day responsibilities. Due to the confidentiality requirements of this research (see 'Ethics' below) and the ease with which some of our participants may be identifiable, we do not detail in this paper the individual collections, sizes, or staffing of the museums.

All participant interviews were digitally recorded, and both the recordings and their transcriptions have been stored securely in an encrypted form. This issue was particularly salient because the research team is based in two separate countries and needed to communicate remotely. We used the open source software 7-Zip to encrypt all files with potentially identifiable information (for example, audio files). Files were transferred using end-to-end encryption in a secure shared storage space. Password protection was used on all computers. Furthermore, the project employed the services of a transcriber who signed a confidentiality agreement and undertook to destroy their own copies of the recordings and transcriptions once their work was completed.

Ethics

There were ethical challenges to both gathering and interpreting the data for this study. ICOM has a Code of Ethics (ICOM 2013) to which all member museums and museum professionals are expected to adhere. The code covers a wide range of activities, from ethical acquisition and deaccession of collections through to how to protect cultural objects in the event of a natural disaster or conflict. In Section 8.7, the code is very clear on the discussion of museum security: 'Information about the security of the museum or of private collections and locations visited during official duties must be held in strict confidence by museum personnel' (ICOM 2013: 12). Therefore, by the very nature of what we were doing we knew we could face some opposition from our potential informants. In practice, we found that everyone that we approached was very keen to discuss security with us – perhaps a reflection of the social capital bestowed upon us as academics from well-known universities. Nonetheless, we were careful to put appropriate measures in place. Informed consent forms were distributed, and further guidance on the ways in which the data were used was offered verbally where requested. Whilst we did not use set questions as part of our interview strategy, we did have themes that we hoped

to cover in the interviews, and these were shared with museum staff over email if requested. As part of the consent process, we gave informants the right to withdraw all or part of their interview data at any time with no explanation necessary.

Furthermore, we recognized the possibility of identification as a security risk: 'A particular configuration of attributes can, like a fingerprint, frequently identify its owner beyond reasonable doubt' (SRA 2003: 39). Due to the nature of the information disclosed to us, and because of the unique nature of each collection and museum setting, we have had to be exceptionally careful about the content of the paper. The last thing we want is to identify security vulnerabilities, or indeed to identify either institutions or individual museum professionals. The anonymization process – in which we balance the usefulness of our findings with our ethical obligation to protect the individuals and institutions that cooperated in our research – has proven to be an intriguing challenge in the construction of this paper.

As a means of ensuring that the paper's content was satisfactory to the sensitivities of contributing individuals, the participants were offered the opportunity to comment on the paper prior to submission. To reduce further the potential to identify participating organizations, throughout this paper we do not distinguish between Finnish and English museums except where there is a country-specific issue worthy of discussion.

Findings
The structure of this section follows four themes that were commonly raised by participants: personal safety, visitor experience, object protection, and repeat victimization.

Personal safety
The issue of personal safety was raised at every museum we visited without exception. It was a priority that came far ahead of that of the safety of collections, even though the relative likelihood of there being any incidents affecting staff and visitors was perceived to be low:

> 'I don't think [it] is very realistic [to assume] that somebody will nick that wallet, but if somebody nicks it, it's just 50 euros or whatever. . . So, if there is somebody holding a knife or something: please take the money and go away and the police will pick you from the [exit].'
>
> *Participant 5*

> '. . .the policy here is that if somebody comes here with a gun. . . pointing a gun at you. . . you just do what they say, that's the security [laugh] training we have.'
>
> *Participant 1*

This emphasis on the issue of personal safety was not reflective of a low level of security training. Participant 1, for example, worked at an organization where the entire customer service team was made up of trained security guards. Rather, it reflects both the priority placed on personal safety by our interviewees and the legal limits of the response available to staff.

Lone working was of particular concern in some participant organizations in both countries. Lone working arose through issues of resourcing and site layout. In Finland, 'in libraries, archives, museums and operation of historical sites and buildings, employment decreased from 2010 to 2013 by nearly 17 per cent' (Statistics Finland 2014). To protect the staff in lone working situations, protocols were established to ensure safety. These generally consisted of walkie-talkie communications with phrases to request support in particular situations. By requesting, for example, a member of maintenance to attend their location, workers could ensure that someone was on their way if they felt uncomfortable, whilst also communicating to the potential offender that they were not alone. Some sites had direct connections to the police, ensuring a swift response if needed. However, staffing levels were mentioned by several participants as a constraint on security:

> 'I'd like to see more staff actually in the gallery spaces. . . and even if it's somebody helping [children] to colour in. If they're made aware that they're also there as security for that gallery and obviously fire marshalling them. That's certainly something I'd like.'
>
> *Participant 12*

A noticeable difference between the two countries was that, regardless of role, males working in Finnish museums would often have basic security training because over 75 per cent of Finnish men over the age of 30 have completed military service (Puolustusvoimat 2015). In England, nationals do not routinely participate in military service, and therefore museum staff would not generally be perceived as having this security background, although one respondent suggested that senior museum security personnel were increasingly being recruited from a police background. In Finland, security guards must be qualified to ensure compliance with state indemnity cover (State Indemnity Board 2013). The relevant training was widely perceived as in need of reform and of tailoring to the museum context. In England, it was invariably senior staff who took the training and then passed on key information to junior staff and volunteers, ostensibly to accommodate seasonal, part-time, and voluntary workers. It would seem logical to assume that there would be a heightened risk of missing or misunderstanding relevant information with this latter 'trickle-down' arrangement, but as yet we have no evidence to support this hypothesis.

Personal safety was not just a concern about staff being exposed to criminal activity, but it was also a concern about staff working in older buildings or on sites where equipment was not perceived to be effective. Participants 2, 3, and 4 worked for the same institution, and were interviewed together:

> *Participant 3*: So they got problems for the health of the workers.

Participant 2: The condition is very poor in some places. . . We have some problems with mould and maybe. . .

Participant 4: And wet problem also. . . as like it's cool. . . it's [a] problem.

Participant 3: We actually have one building closed now because of these problems.

The building(s) in which a museum is sited may also present limitations to the security implemented at museums. Negotiations with local planning authorities may be necessary for alterations to be made to listed or otherwise historic buildings:

'. . .we couldn't do all [the] things we wanted, because of the nature of the building. And, but we used a lot of time for the planning and the authorities were also part of it and they said. . . some things we wanted to do and they said "No, you can't do that", and then we have to rethink and luckily we had time.'

Participant 7

We have stated elsewhere (Grove and Thomas 2014) that there is a need for a holistic approach to heritage assets including historic buildings, archaeological sites, and cultural landscapes. This exploratory work is already uncovering the need for a similar approach within the museum environment. That is, criminologists may be inclined to consider museum security as predominantly concerned with the protection of collections and individuals from crime and related harms, but, as we can see, the issues affecting museums are far more complex. Competing priorities for funding and conflicting concerns over collections add to the need to create context-specific security strategies and training, which we examine shortly.

Visitor experience

The visitor experience was a priority to the participants in this study. There were clear trade-offs between the security of objects and the ability of the visitors to benefit from exhibitions:

'There is the highest risk because you got people directly handling [the] collection. Unlike in other museums, we don't have the. . . like here's the junk and the handling collection or here's this specific handling collection.'

Participant 13

'. . .you drill holes through the barrel but the holes have to be all the way through to the end of the barrel and 5 cm apart, so we are talking about 10, 15 holes per barrel, so it doesn't look like a gun anymore. . .[this] represents to us the same as if somebody asks to drill through the Mona Lisa.'

Participant 1, on decommissioning display weapons for safety

Participant 6: 'So we have [an exhibition space] that has two floors. . . It's been a bit problematic, 'cause the only guide there is, can't be on the upstairs [floor] and now be running in every room and. . .'

Participant 5: 'Yeah, and now. . . If there is only one guide working there we will close the upstairs.'

In this last example, the museum was planning to digitize the part of the collection that was not always open. Whilst this was clearly perceived to have some disadvantages – a secondary visitor experience and the risk of theft of the tablets on which this would be displayed – there was also the advantage of increased accessibility to visitors with disabilities. Museums are not always custom-built, and, particularly in listed or otherwise protected buildings, there can be difficulties installing 'reasonable adjustments' such as lifts and ramps as required in England by the Equality Act 2010. Historic England (2015) provides guidance on reconciling access requirements with conservation sensitivities. Whilst permission for changes may not always be straightforward, Historic England (2015: 4) recognizes that 'the survival of most historic buildings depends upon their continued, viable use and this may, among other things, require alterations to improve access'. Whilst the Finnish constitution enshrines equality for people with disabilities (Ministry of Justice n.d.), 'there are no direct accessibility laws in Finland' (Heinonen and Teittinen 2012). Nonetheless, building regulations provide guidance on accessibility (Ministry of the Environment 2005), although there is little evidence about compliance (Heinonen and Teittinen 2012). Accessibility offered some challenges to our participants regarding balancing security and access.

At other times, the mitigation of security risks was prioritized over the visitor experience. The title of the present paper, 'The Rhino Horn on Display Has Been Replaced by a Replica', comes from a sign in one of the participant museums. Europol (2015) states that 'powdered rhino horn, like many other animal and plant based powders, is used in non-evidence based traditional Asian medicine'. Following an international spate of thefts targeting rhino horns, museums have been advised to place the originals in more secure storage off-site, or even to destroy them (Atkinson 2011). This is consistent with the crime prevention rationale of 'removing objects' in order to reduce the potential reward to the offender (Cornish and Clarke 2003) and should not be a decision made lightly. It is common for museums to only display a small proportion of their collections (cf. NMDC 2003); however, it became clear in our interviews that security staff may choose to overrule curating decisions over which objects are on display. For example, following a high-profile terrorist attack (which took place elsewhere in the world), the security staff in one participant museum immediately removed relevant objects that they considered to be controversial from display:

'The fact is this. If we need to secure objects, then they are not here. So, if we are so nervous about an object that the security has to take absolute importance, you don't give it to the public. You lock it away.'

Participant 9

There seemed to be an expectation in some participant museums of a certain standard of behaviour from visitors, and alerting procedures were put into place in instances where new systems were installed:

'. . .we were afraid in the beginning before the exhibition that people would get really annoyed because of that metal detector gate. So we communicated it very strongly both in our printed material, web page and everything.'

Participant 7

It seemed to be taken as read that there would be compliance with the social contract of museum behaviours, in line with Trondsen (1976)'s findings that most people understand the basic role expectations within a museum environment. However, given the constant drive for museums to attempt to attract non-traditional museum-goers and new audiences to their facilities (see for example Lang et al 2006), it may be beneficial to assume less familiarity with these expectations. According to a recent European Commission study, 52 per cent of UK residents and 40 per cent of Finnish residents had been to a museum or gallery at least once over a twelve-month period, compared with an EU average of 37 per cent (EC 2013). This suggests that there is still a relatively large proportion of EU residents without recent experience of a museum setting. Agreeing on and displaying rules is a basic step towards removing excuses from potential offenders (Cornish and Clarke 2003). Caution must be exercised, however, as enforcing new rules can sometimes be problematic. One participant organization had implemented a 'no photographs' rule after a security breach, in order to prevent their security systems from being visible more widely. However, given the small size and ubiquity of electronic equipment capable of taking photographs, it proved to be difficult to police, and the rule was perceived as having a negative effect on visitor experience. As a result, the institution reversed the decision to restrict photography.

The perception of security amongst visitors was important to the members of staff in this study. One participant ensured they interviewed security guards (pre-selected by an external company) to assess whether they would present a customer-friendly attitude, whilst another removed their security guard completely:

'. . .he was actually becoming a barrier between what we tried to offer and our visitors. You know, all of a sudden you got somebody in your face, with security. . . You know, it's almost off-putting.'

Participant 11

Another participant stated that their front-of-house security was less about the likelihood of identifying people putting the museum at risk, but more about increasing the feeling of safety amongst visitors. Cordner (2010) argues that reducing fear of crime is in itself a worthwhile outcome of security measures – fear of crime certainly can have a devastating impact on people's lives (cf. Skogan 2006; Fear of Crime Team 2005), and we argue that museums should *feel* like a safe space in order to encourage widespread use.

Object protection

Protecting objects was, unsurprisingly, another priority for participants. Risks were perceived to come both from accidental damage and from purposive targeting such as theft. One incident was described where a visitor was leaning against a valuable artwork:

'At the end of the day it doesn't make a difference, I mean, what you're exhibiting; [but] it just happened to be quite – a very expensive piece.'

Participant 8

Display decisions were often informed by the perception of risk from this sort of non-malicious damage. Damage to objects appeared more common than thefts amongst our sample, and security was targeted accordingly. One concern was the risk of (targeted) vandalism of exhibits. This was particularly relevant where collections contained controversial pieces:

'. . .one threat is that somebody tries to ruin our collections, because of what they represent. . .'
'But it's kind of the threat that is really hard to manage, because it is enough [that] there is one person with the, for example, spray bottle in the pocket [who] goes in and starts to spray our [exhibits].'

Participant 1

Political, religious, and sexual artwork may be particularly susceptible to vandalism (Cordess and Turcan 1993). In 2007 a Swedish exhibition of Andres Serrano's sexually explicit photos was attacked by four individuals with crowbars and axes during visiting hours (Vogel 2007). Vandalism in museums does not just pose a risk to objects but is likely to impact on the staff, volunteers, and visitors who may be present at the time of an attack. As many examples of deliberate destruction of cultural heritage show, the loss of culturally and/or religiously important material and structures also have a profound effect on the wellbeing and morale of communities (cf. Walasek 2015 for a detailed account of the destruction of cultural heritage in Bosnia in the 1990s and the political and cultural impacts of this destruction).

The perception of theft varied widely, and there was a suggestion by some of our participants that theft was rare:

'. . .no theft of, of any, maybe something here in the shop.'

Participant 7

The true level of theft is probably impossible to ascertain:

> 'The fact is that we don't, most museums [in the country] have no idea what's been stolen. . . because you don't realize it for 20, 30 years. So the extent of it is almost impossible to judge.'
>
> *Participant 9*

Not least because cataloguing practices were diverse:

> 'We are partly doing cataloguing on the side. Kind of the inventory. So, it's not very thorough work.'
>
> *Participant 3*

Although at least one participant took even relatively minor theft very seriously:

> 'And if we have one theft at the shop, we will throw everything at it. We will have high visibility uniformed patrols in the shop, we will call the police in, we will circulate the suspects.'
>
> *Participant 9*

The strategy of this latter participant for dealing with incidents utilizes the 'broken windows' theory (Wilson and Kelling 1982). The principle of that theory is that by creating an environment where low-level incidents are seen to be tackled immediately, the signals that any criminal activity might be acceptable are removed. The danger here is, of course, that without care this approach in itself detracts from the visitor experience. It was clear that participant institutions took different approaches to striking this balance.

It was also apparent that, amongst our participants, some incidents were more memorable than others. Sometimes this was due to the type of security lapse that led to, for example, a break-in, such as when a miscommunication with contractors led to an area of a museum being left unlocked:

> '. . .all we can think is they actually stumbled in on it and thought. . . "this is the grand jewels, I'll phone somebody up to bring a car outside". No CCTV in the area, the door was left open.'
>
> *Participant 11*

At other times this was due to the type of incident:

> 'So the memorable thing is for me when a drone landed on our roof that seemed to be spying on security systems.'
>
> *Participant 9*

Security provisions were not static, but were continually reassessed in response to the changing environment. They varied by location within the museum, and were altered to accommodate current exhibitions. External demands, such as stipulations from loaned exhibitions and insurers, played a large role in security decisions. In some cases, the state sets minimum standards of security (cf. State Indemnity Board 2013). One participant organization had recently made significant improvements to their security in order to enable them to host a high-profile collection. Whilst this represented an expensive investment, it was believed that this put the museum in a strong position to host future exhibitions of a similar calibre. As the security was being installed, it became clear that future exhibits may require even greater levels of protection – and so the plans were adapted during the process. In this way, a large initial investment was perceived to be worthwhile in the longer term. Security and other improvements were often contracted out to independent companies at some expense, particularly where a temporary increase in security was required:

> 'I wish that I was actually shown this budget before they started, we could have decided what we wanted and what we didn't. It wasn't until the last minute that we found out that the alarm system had been dropped out of the list. And we said, oh great, the only trouble is we got the automatic doors, they have to have a fire alarm system linked to them. Otherwise we can't legally open.'
>
> *Participant 10*

Background checks on staff members were varied and again often contracted out – although, almost universally, individuals with lower clearance did not have unsupervised access to collections, and their access was restricted to certain sections of the museum premises. This was perceived as particularly important for short-term employees and volunteers. In most museums, only a very small number of staff had unsupervised access to the most valuable collections. This is vital for security – Vollgraaff (2014) gives several examples of 'insider' involvement in theft from museums, although at least one of our participants disagreed that this was a problem:

> 'The FBI say 85 per cent, I would say 5 per cent.'
>
> *Participant 9*

Nonetheless, restricting the number of people accessing secure areas has two key benefits. First, fewer people have the *opportunity* to carry out thefts. Second, in the event of a theft there is a smaller pool of suspects with access to the objects, and therefore an arguably greater chance of detecting the culprit.

Repeat victimization

It was notable that repeat victimization was mentioned by more than one respondent. In one case, a small break-in – perceived by the respondent to be a scoping visit – was followed by a significant theft:

> 'And [the] year before, I can't remember the date, but we had burglars coming in we believe that they were the same group and they were just checking how to get in and they just saw that this wasn't the

way to do it and then they used the other part of the museum to broke. . . break in.'

Participant 1

A second museum made significant efforts to clean up graffiti as it occurred – again demonstrating the broken windows theory mentioned above, noting:

'. . .we have the zero tolerance for graffiti so when immediately somebody was – we'll wash the graffiti away, because as you know it will spread the problem very quickly.'

Participant 5

This is consistent with findings from other research – prior victimization is one of the best predictors of future risk (Pease 1998; Bernasco et al 2015). Targeting preventive measures based on repeat victimization has also been shown to be an effective way of reducing risk (Grove et al 2012; Grove and Farrell 2012). Speed is of the essence with repeat victimization prevention – offenders learn from the initial offence and repeats often occur soon after it, with repeated burglaries, for example, occurring within 48 hours (Polvi et al 1990; Bernasco et al 2015). In contrast, museums are not set up to move at speed, and security upgrades are not just costly but must be planned effectively so as not to conflict with other museum requirements. This causes delays with the implementation of such measures – a timescale of one year to make security changes in museums is not unrealistic. Whilst we have sympathy for the budgetary and structural constraints facing museums, there may be scope for more effective practices relating to short-term protection against a temporary increased risk. Early indicators here suggest that we need to understand more about the repeat victimization profile of museums to identify the highest risk period. We can speculate, for example, that the more sophisticated targeting and planning of museum thefts may result in a different signature of repeat victimization risk in museums than in other sectors.

Several participants gave examples of information sharing in the immediate aftermath of a victimization to help guard neighbouring or similar museums against the risk of near and virtual repeats:

'. . .we got stung by that but we are able then to pass information on to all other attractions to say. . . be vigilant because there is obviously a team going around at the moment.'

Participant 11

However, communication about security with partners outside the organization was haphazard in places, with personal relationships often dictating collaborations whilst broader security networks were rarely utilized by many network members even when they did exist. This suggests that it is perhaps not the unwillingness of organizations to discuss the issues relating to security which limits partnerships, but rather the absence of tailored, relevant support groups. Time is precious for these organizations, and therefore they are necessarily selective about their professional relationships.

The need for effective communication about security and risk *within* museums is also important. Security measures or risks may change between shifts, and consistency of approach is necessary to ensure continued security, particularly immediately after an incident. Staff working irregular hours featured at some of the participant organizations, and participants divulged a variety of measures to deal with this issue, including regular briefings, internal email, and handwritten notes to hand over important information. The imperfections of such systems were acknowledged by participants, but pragmatic considerations outweighed these concerns:

'There is a book, notebook, it's the black book over there and of course, we have email. And then the oral tradition [laughs]. But yes, there's a gap, of course.'

Participant 8

Conclusion

This paper has taken some early steps into the realm of museum security. Whilst we only studied a small sample of museums and their staff, we have seen that there appears to be common ground between participants from a range of different types and sizes of museums. Structural constraints such as the building(s) in which the museum is sited, financial limitations on staffing, and the need to find a balance between security and visitor experience were frequently mentioned. Training was repeatedly highlighted as an area in need of improvement: it was often perceived as being outdated and irrelevant, and particularly difficult for seasonal and part-time employees to attend. Museums of different sizes and budgets also clearly need context-specific advice. Communication, both within and outside individual museums, varied considerably and relied on informal relationships – leaving information sharing at risk of failure with the movement of staff.

Despite the fact that museums work within often very limited budgets, we saw a lot of excellent practice within museum security. However, it would be fair to say that this was inconsistently applied across the museums where we interviewed. As well as the inevitable call for further research, we therefore suggest three steps forward that may be worthy of investigation.

First, whilst staff have many demands on their time, an over-reliance on informal relationships leaves institutions often reliant on a single point of contact. We do not expect the small, voluntary-run museums to send a representative to every international museum security conference. What we call for, rather, is the development of a set of networks for information sharing designed to meet the needs of museums across a range of sizes and budgets. It is vital to avoid imposing this from the top-down and to engage with museums at different levels to discover what would be useful in individual contexts, connecting museums with similar concerns to share best practice from a pragmatic standpoint.

Second, during our research we discovered what seemed to be the first rule of museum security: you do not talk about museum security. Despite some recent moves to close the gap, it is perhaps this reticence to involve outsiders that has left, in many places, a distinct separation between security and museum sectors. Drawing learning opportunities from other areas would add value to each of these sectors. One such example is that of situational crime prevention, which 'is applicable not just to "opportunistic" street crimes, but potentially to every form of crime, however complex, and however determined the offenders' (Clarke 2012: 5), and we therefore see situational crime prevention as worthy of further exploration within the museums context.

Third and finally, we suggest that there is much to be gained from developing more tailored programmes for staff in museums. A repeated source of dissatisfaction from our participants appeared to be the inflexibility of security training programmes, which were perceived as being delivered by individuals and groups that did not understand the museum context. Drawing on the best practice and interdisciplinary approaches alluded to above, we suggest there is a need for the development of completely new training programmes, to be delivered in flexibly and contextually appropriate packages to suit a range of budgets.

Competing Interests

The authors declare that they have no competing interests.

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