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Un-authorised View: Leveraging Volunteer Expertise in Heritage

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ABSTRACT
Volunteers are an underused but important resource in presenting plural heritages within large heritage organizations. We report on a qualitative study at a heritage site in the UK which combined explorations of volunteers' practice and digital design. The study comprised of observational fieldwork with co-creative activities across eight linked workshops, where we explored the site with volunteers, and how we might leverage existing working structures to make new design prototypes. Our collective account contributes new insights on working with volunteers and the opportunities that arise from acknowledging them as *genius loci* – recognising them as experts of their own experience and capturing and supporting their skills as storytellers. Working with the volunteering staff in a co-design process we created innovative designs including our *Un-authorised View*, which draws out the unique perspectives and the personal stories at heritage destinations.

Author Keywords
Critical Heritage, Plural Heritages, Cultural Probes, VR Design, Digital Storytelling, Genius Loci

CSS Concepts
• **Applied computing~Arts and humanities** • Human-centered computing~Human computer interaction (HCI)

INTRODUCTION
Engaging with cultural heritage and heritage sites is an important part of people's everyday lives. Visiting heritage sites is motivated by many reasons including learning and education, family activities and recreation, special interests in the site (e.g. its artefacts, historical figures, gardens and landscape), part of tourist programme, and a personal relationship with the site [49, 50]. Heritage settings are also increasingly combining digital interactivity and technology to enhance visitor experience and deliver educational content [39]. When exploring heritage sites visitors are often presented with carefully constructed narratives of what is considered heritage and how it is managed. These narratives repeatedly gear people into the history of the space, account events and highlight the location's importance to society at the time. This has been described as Authorised Heritage Discourse (AHD) [59]. The term has since evolved and a new wave of heritage research has focused on critical heritage discourse [31, 72, 73, 75] including intangible heritage [48, 62, 63], future heritage [32, 74], and plural heritages [54], amongst others. These changes in heritage studies recognise the power-play present in institutionally authorised narratives, acknowledge increased demands of participatory culture and the need to add value for wider audiences [58]. HCI research in this multi-faceted heritage environment has largely focused around designing for visitors' engagement [1, 2], on the importance of interaction and facilitating the need for social experience of heritage sites and telling stories [26, 27, 69], reconnecting to material objects [40, 46] and incorporating play [22, 65].

Recently, Ciolfi [11] appealed that HCI researchers had been bypassing volunteers and local research groups as a rich source of insight. Volunteers working at historical sites play a major role in the running and maintenance of the place. These enthusiastic individuals hold vast amounts of knowledge not only connected to the authorised stories but to their personal connections and every-day experience of heritage. Recognising and presenting these pluralities of histories through digital technologies is challenging. Relatedly, design work is emerging that addresses the importance not only of heritage professionals, but also volunteers [17] and local community residents [55]. These authors have conducted detailed ethnographic work across different sites. Claisse et al. [17] focus on a small independent heritage site and Schofield et al. [55] centre on a community that is outside the management organisation. The authors highlight the value of looking across a plurality of viewpoints and finding new voices and spaces which have

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not been explored. We respond to this challenge by working principally with the volunteers and staff at a large national heritage organisation in the North-East of England. Particularly, there is opportunity to give a voice to volunteers responsible for running the site. They are important custodians in this space, and as key stakeholders in heritage presentation, it is worth exploring how interactive technologies can support their work.

In this paper we present a qualitative inquiry forming part of a design ethnography [21] that describes our ongoing work at a national heritage organisation. We report on our 18-month engagement with a heritage interpretation project where we are co-designing a digital experience for an exhibition *in situ*. Our report is an analytical account of the activities which constitute this as research through design (RtD) [25]. With attention to outcomes from our fieldsite work, we describe focus groups and co-design workshops we held with the volunteers and management team. We describe how we facilitated technologically pragmatic workshops to familiarise participants with technologies they had expressed interest in and let them use these hands-on. Our main aim was to explore approaches of working with volunteers to not only elicit their more personal histories but to also empower them in actively shaping these as content for an interpretation-focused design installation.

The contribution of our work is to reframe current design approaches with communities in HCI-Heritage research. We rethink designing for 'spirit of place' and use the term *genius loci* to better reflect on our engagement with volunteers by acknowledging them as experts of their own experience and the place. Through the lens of designing with *genius loci*, we describe how in engaging with various digital materials, we iterated through different designs such as our *Un-authorised View* capturing both volunteers' interests and practices whilst working within institutional restrictions. We further situate *genius loci* in a wider context of working with undervalued stakeholders at heritage sites, and as in prior work, we stress their importance to the community.

BACKGROUND

HCI research and heritage have a long-established connection. Prior work has aimed to provide visitors, heritage professionals and communities with better opportunities to interact, interpret and experience heritage sites [39, 44, 51]. In this section we provide a brief overview of relevant heritage terms and research done by HCI professionals in heritage. We feel that with the current wave of design work in heritage, notable issues have been raised foregrounding areas of interest to shape HCI design practice. We highlight pertinent research themes and how we incorporate those in our methodology to build on the most recent related research.

Bridging Heritage Theory and HCI Design

Heritage literature is rich, and we draw from those we consider key to our work in HCI. Schofield et al. [55] discuss the complexity of heritage research and the potential of its impact on design. We, thus, engage with the themes of AHD, 'spirit of place' and plural heritages. AHD is a popular and actively discussed topic in heritage studies. AHD arguably dominates decisions made about heritage sites: professionals decide what is and what is not a nation's heritage [59]. Within the narrative of a nation, AHD prioritises sites that are remnants and symbols of the experiences and values of the powerful elite [60, 61]. It neglects community practices which shape the heritage environment and our understanding of it. Yet heritage places are continuously evolving. This change depends both on the people who engage with established heritage values and the personal relationship they have with the location. Jones [36] links this to a 'collective attachment to place that embodies meanings and values that are important to a community or communities' [36:22]. This covers sense of identity, distinctiveness, belonging, memory, oral history, and the cultural practices associated with the historic environment [36]. This resonates with the popular term 'spirit of place'. Across literature and fields of study spirit of place is interpreted differently covering meanings such as abode of special beings, energy fields, authenticity, narrative, local distinctiveness, essence, and character among others [7]. In heritage management, spirit of place is commonly defined as *"the tangible (buildings, sites, landscapes, routes, objects), the intangible elements (memories, narratives, rituals, festivals, traditional knowledge, textures [etc...], that is to say the physical and spiritual elements that give meaning […] to place.*" [34]. Hence, designing for 'spirit of place' is mostly associated with attitudes towards achieving historical authenticity [17]. Authenticity is seen as an intrinsic and abiding property to material objects, monuments and landscapes which presents their 'true' nature [37]. However, authenticity is questioned as being in large part culturally constructed, dependent on regimes of values associated with authorising institutions such as museums, galleries and more [37:334]. In that sense, striving for authenticity invokes AHD.

In better representing the polyvocal aspects of collective attachment, we welcome the notion of plural heritages to oppose AHD [55]. Using the phrase plural heritages reminds us that heritage is plural precisely because it evokes different associations, and covers other meanings, uses, and values for different groups [54]. These perspectives should be validated by providing opportunities to explore personal, affective and partial dimensions in technological interventions in heritage [55]. The authors propose the use of co-design activities as an approach to heritage representation and report on their use of cultural probes. We align with this perspective of co-design in ethnography but extend it with our own selection of methods. We incorporate the plurality in our designs by getting participants hands-on with technology to actively rethink how it shapes their stories, and how they can interpret the technological paradigm through their eyes.

We inform our approaches by community-sited HCI work such as [18, 19, 23, 28] which emphasises long-term engagement and design activities to question common

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assumptions about technology and social issues [23:41]. For example, hands-on activities ground participants creative expressions: manipulating the capabilities of a given technology allows them to shape it with their own voice and style [23]. Fox and Le Dantec [28] describe a series of public workshops focused on conceptualising and enacting forms of citizen engagement by reflecting on technology's role in the community. Their approach creates opportunities for non-experts to manipulate specialised materials, e.g. sensors, computational boards, and adapt the technology as a tool for communicating their values. These insights help bridge conversations between HCI and heritage.

Co-Design in Heritage

Both interaction design and heritage studies are underpinned by a social dimension, shaped by cultural and political factors, and their interpretation in research. It follows that co-design has been an underlying principle in HCI heritage work. Ciolfi [10] provides valuable insights regarding co-design in heritage reflecting on the range of stakeholders and their impact on design. Roussou [52] reports on working with heritage experts, and organising workshops focused on co-authoring, writing and creating digital stories. The activities were tailored according to the site's context and staff's level of expertise in relation to digital technologies [52]. Co-design has also been used to involve visitors as contributors to interactive systems, thus supporting visitors' interaction, letting them personalise stories [52], listen to other visitors' memories and record new ones [15]. We see co-design as an opportunity to connect with various personal stories when designing for heritage experiences. Ciolfi [11] has voiced the issue that HCI research focuses on the demographics of users and their behaviour. That is not to say the above examples have not recognised the plurality of communities and stakeholders involved in heritage sites - they have engaged in co-design with various participants [10, 13, 20, 52]. However, Ciolfi [11] argues that as there are multiple communities related to heritage sites, e.g. local residents, volunteers, special interest groups, research is neglecting to create technologies that support and empower them. Meanwhile, communities have started identifying what is of value to them and taking ownership of their heritage as well as its preservation and communication [14]. Work done in heritage has followed this movement. Jeffrey et al. [35] engage in ethnographic and hands-on work with local residents to include them as active researchers in identifying and recording heritage. Participants selected sites of interest outside of institutionalised heritage protection and used digital means of recording and disseminating these.

HCI work with communities outside heritage management institutions include Taylor [64] who designed with residents of an inner city area in the UK, helping them celebrate their architectural heritage despite social prejudices. Similarly, Terracciano et al. [66] explore a multisensory digital interface with diverse communities to facilitate intercultural exchange and democratise decision-making processes in cultural heritage. Schofield et al. [55] also position their work with communities outside the institutions managing the site. Relevantly, Ciolfi and Petrelli [16] and Claisse et al. [17] engage with volunteers directly involved in running a heritage site. The former began bridging the gap to involve volunteer heritage workers who solely manage a site [16]. Similarly, Claisse et al.'s [17] research was participatory in nature where ethnographic observations and personal engagement with the site were supplemented with direct design work with the volunteers at Bishops' House in Sheffield. The team and participants co-designed and extended the stories offered to visitors beyond previously presented authorised narratives. However, our design aims differ in not just broadening the set of histories communicated, but also in exploring how these are interpreted through the personal stories of our participants. A particular challenge is that our research is situated in collaboration with a large national institution in comparison to a smaller and independent site.

DESIGN METHODOLOGY

Our methodology introduces digital technologies as part of a wider conversation exploring plural heritages (as in [54]). Similarly we saw opportunity for using novel technologies alongside processes for supporting the generation, representation and sharing of social traces in cultural heritage [10:69]. Correspondingly, we describe our work towards an upcoming exhibition where we will present designs co-created with volunteers. Our wider study adopts design ethnography [21] as a common point of inquiry reflecting the diverse research team and participants. In the following, we describe our longitudinal qualitative fieldwork that spanned over 18 months, included 8 workshops with 19 members (both staff and volunteers), which supported co-design activities using accessible micro-controllers which let participants experiment hands-on, and with virtual reality which allowed participants to better express themselves. We used co-design to facilitate new domains of collective creativity [53], with tools and techniques adapted to the context [21]. We grounded our activities in the professional practices of both HCI design, heritage researchers and the volunteering and staff community, building our engagement on contextual knowledge [43]. We connect personal and institutional histories across both authorised and plural heritages, likewise using methods that support ideation, co-creation, prototyping and validation [21].

The Heritage Site

We focus our work on an 18th century Baroque country house[1], in the North-East of England (herein referred to as 'SD'). The defining event of this property is a fire in 1822

[1] Country houses in the UK are historic properties, often with sizeable land holdings, normally several centuries old (often with older foundations), which are associated with the 'landed gentry' or aristocracy, which are opened to visitors as historic tourist attractions. They are commonly owned or managed by a combination of the original families and/or charitable heritage institutions [8].

which originated in its Central Hall and expanded quickly, gutting the entire central block. In the 1950s, the inheriting family returned, continued refurbishing works on the Central Hall, and opened the West Wing to the public by organising lavish Medieval banquets. The house was last occupied in 2007. It was then acquired by a national Conservation Charity (CC) in 2009 after 14 months of fundraising. SD is currently managed by a core team of 7 staff: general manager, conservation project manager, visitors experience officer, gardens and landscape officer, house and collection officer, community and education officer, and media and communications officer – as well as supporting admin and collections staff, and over 150 registered volunteers, 70 who volunteer on a regular basis. Identified as a national priority by CC the property won national funding to support a £3.5M, renovation project match-funded by CC. The 3-year plan will carry out essential maintenance and conservation work, improve visitor facilities, and re-interpret the collections.

CC is eager to incorporate digital technologies for their visitors. They have worked with artists and students to create visualisations and design interventions. These collaborations have allowed the heritage organisation to experiment with digital interventions and consequently the management team are interested in new state-of-the-art technologies and a desire to use these in their visitors' offer. Management also recognise the vast knowledge that volunteers hold and the nuances they bring when telling stories to visitors. The organisation works closely to create a 'OneTeam' strategy which addresses the importance of volunteers in the running of the site. Every month they have training events, and every six months thematic talks are given to the volunteers. Regular tabled meetings are organised with volunteers to discuss any concerns and serve as consultations. The management and volunteers share numerous common spaces where everyone is free to share ideas, recommendations, or to express dissatisfaction. The current renovation and interpretation project mean the site is constantly changing. This is communicated to the volunteers in weekly updates describing the construction work progress and site closures; operations meeting notes are shared with the volunteers as well. We saw the 'OneTeam' environment as an opportunity to open a design space with volunteers around the personal stories and hidden histories of the site, in which they are experts. Like the heritage organisation itself, the volunteers are also interested and intrigued by digital technologies which they have discussed together but have no access to.

Participants

Our activities are centered around two groups: the management team (those in leading and decision-making position) and staff and volunteers. We began by addressing these groups separately to ensure they might speak freely.

Volunteers are an integral part of CC as an organisation and key to running its properties. They are the face of the charity and play a crucial role in the visitors' experience. They become experts on the house and collections, come to know the property inside out and how to capture the imagination of visitors. At SD, volunteers are mostly local community residents, with some participating in their research groups. Volunteers have been closely related to the history of the property, from growing up and seeing changes in the material fabric of the Hall, to attending Medieval banquets, to fundraising for acquisition by CC. This group presents an exciting alternative for experiencing and engaging with heritage narratives and eliciting another dimension of the plural heritages at a single location. Throughout our wider activities, we engaged with volunteers looking after the gardens, retail and hospitality, and maintenance. Despite overall interest in the project, we focus our work on 10 volunteers who attended our workshops and have the role of room guides.

Management has often been the focus in co-design approaches in heritage [12, 70] with outcomes including adaptable digital tools to develop exhibitions and curate stories for site-specific contexts [52]. Instead, we worked with the management team to gauge their attitudes towards digital interventions and willingness to give voice to the volunteers. Throughout our ethnography members of staff joined activities with volunteers and both groups merged in the final stages, thus, validating the 'OneTeam' approach. Table 1 shows participating employed staff and management members across the site and CC, where the gardening and gonservation team members contributed to our final design.

Participant	CC Relation
General Manager	Site Management
Regional Visitors Experience Officer	Regional Management
Visitors Experience Officer	Site Management
Media and Communications Officer	Site Management
Garden and Landscape Officer	Site Management
Community Engagement Officer	Site Management
Gardening Team Member	Employed Staff
Conservation Team Member	Employed Staff
Volunteers Coordinator and Admin	Volunteering Staff
Heritage Engagement Intern	Student

Table 1. Management team participants from the CC.

Initial Fieldwork

Our fieldwork is part of a wider ethnography that began with and used observations. Our approach to using observations was framed through the lens of experiencing the property as a visitor and as a volunteer. This intense period of immersion began with the lead investigator undertaking a week-long placement with the management team in spring 2018. Over

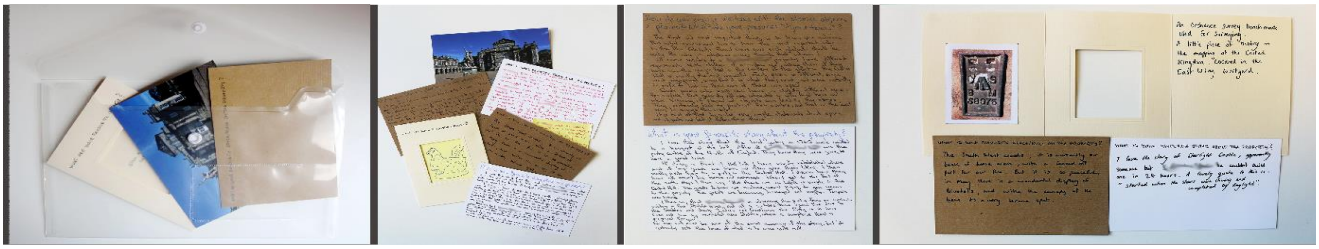

Figure 1. a). The probe pack; b). Various completed probes; c). Completed postcard and free letter card; d). A completed pack

the next 18 months, we spent over 60 days on site. This included more personal time with volunteers where we listened to their stories and observed individual approaches to presenting the collections to visitors. In addition, we had eight formal and informal meetings with the general manager (totaling in 20 hours); and frequented the property as a visitor at various occasions and events (7 independent visits). The first author commenced a follow-up 5-week placement as a volunteer across different teams in autumn 2018. Notes from observations took forms as both written and typed material. Those from events and meetings covered mainly factual material, whilst the volunteering placement took the form of reflective journal and personal experiences.

We continued our engagement with further embedded activities. Similarly to [55], we adopted cultural probes as a method to complement our observations and elicit plural heritages instead of focusing on design *per se*. We echo [55] and recognise the concerns of using cultural probes as a substitute to in-depth ethnography raised by [5]. In this case, probes were adopted as a *reciprocal* means of getting to know participants and opening space for dialogue whilst capturing their heritage values and letting them understand more about our motivations and intentions. Our probes were gifted to participants and prompted them to think about SD in relation to identifying and critically engaging with heritage values and authorised heritage themes. The probe design was simple but effective (Figure 1.a.). The packs contained three activities for staff and four for the volunteers.

Post Card – We used an image of the property and asked participants to write out their favourite stories about SD. This was slightly ambiguous to see how participants would interpret the idea of 'stories' – whether they would talk about stories connected to the family and other institutionally legitimised narratives, more recent community history, or their own stories connected to the property (in Figure 1.c.).

Gift Card – This design involved some DIY. It prompted participants to identify their favourite 'object' at SD. Again, the interest was whether 'object' would be interpreted strictly as a material possession from the site's artefact collection or whether it would be related to a different aspect of the property. The DIY element encouraged the participants to draw, print, or take a photo of that favourite object, and stick it to the designated space in the foldable card (in Figure 1.d.).

Free Letter Card – One was given to management and two to volunteers. The first posed the question about the participants' favourite space/place on the property (Figure 1.c.) and was distributed to both groups. This aimed to evoke a written expression of emotions participants felt *in situ*. This was open to participants to interpret and relate either to a personal memory or to a broader connection to the heritage site. The second asked volunteers to write about how they engage and tailor stories to visitors and different audiences. The intention was to elicit personalised responses that would differ from generic approaches to delivering predetermined stories. We hoped to accentuate play between personal and authorised heritage stories.

In the activities with the management team, all probes were welcomed and completed. In contrast, volunteers had mixed reactions to the probes. Although 15 packs were distributed, five were completed and returned. Despite this discrepancy, the engaged participants described how they enjoyed thinking about the questions and took great time to express their experiences within SD (Figure 1.b.).

Workshop 1 – Focus Groups

The initial workshop activities were structured as focus groups in order to integrate our data collection into the regularly scheduled meetings between staff and volunteer - one with five representatives of management and the other with eight volunteers. Focus groups lasted two hours and followed a semi-structured format. We wanted to get further acquainted with the context, establish a group of participants and their aspirations for the collaborative process. By integrating the sessions into the regular meeting schedule, participants were relaxed and freely shared their experiences. The sessions were photographed, and audio recorded. In the first part of our focus groups, we reflected on some of the responses to the cultural probes. We decided to elaborate on those to further prompt personal stories that related to the site. The second part of the workshop focused on identifying opinions towards digital technology and its implementation in other heritage sites. With this, our team hoped to identify links between the expectations and sentiments that participants had when discussing the role of technology in heritage. Predetermined or prompting questions gave way to flowing discussion. In this part of the session preferences towards specific technologies started emerging.

Workshop 2 – Co-design workshops

Following our observations and focus groups, we designed the co-design workshop to address issues around manipulating digital technologies. This workshop stressed

the importance of incorporating co-design as part of the methodology without pressure on producing finalised designs [55]. Similarly to our focus groups, sessions lasted two hours, were audio recorded and photographed. One workshop was held with management (six participants) and one with volunteers (eight participants). The activities were split into two sections with the first part stimulating design thinking using ideation cards. These cards drove the early stage of development (as in [30, 33, 41, 71]). Cards were created by the research team with a loose structure detailing *Domain* (the field of heritage e.g. industrial heritage), *Feature* (characteristic e.g. having a cinematic aesthetic) and *Issue* (what problem this addressed). The concepts were drawn from analysis of discussions held at focus groups. Cards were selected at random.

The second section challenged participants to prototype with physical materials and accessible technologies. We provided materials such as colour markers, cardboard, plasticine, etc., and introduced participants to digital technology through accessible and educational tools. This intended to help participants establish a positive relationship between analogue and digital technologies – being both material but also technologically pragmatic. The digital tools available were: sensors, LED light strips, and BBC micro:bit boards (an open-source development board that can run simple code from a website). This choice opened design to everyone – inspired by its simple form factor and laid bare circuity. These technologies provided a stepping-stone to more complex technologies, which our participants had begun expressing interest in.

Technology Workshops

We were inspired by the 'OneTeam' approach to facilitate the co-creation of content not only between us as researchers and the participants, but between both participating groups. Our initial fieldwork showed that staff and management experienced the property through their personal stories and connections but were likely to adhere to authorised narratives due to their positions. As the work continued, the groups merged into one, with four volunteers and two members of staff (representing the gardening and conservation team). Additional volunteers also joined workshops intermittently. They contributed their knowledge and expertise eagerly but preferred not to commit to creating content for the installation design. Participants had previously expressed interest in Augmented and Virtual Reality as possible technological paradigms to engage with. They saw VR as a medium for audiences to have a more intimate experience of their personal stories, hoping that this would create a connection between them and visitors. In contrast, AR presented a playful opportunity which could allow a visitor to interact with the space in a more social way and to explore the site, unearthing behind-the-scenes heritage operations and abstract visualisations of the authorised histories.

We hosted four technology focused workshops. Following an already established routine, our workshops lasted two hours, were audio recorded and photographed. We informed our workshops' structure by [23] and [28]'s detailed approaches to opening technology's design to non-experts. We began Technology Workshop 1 (TW1) by discussing what is possible within the scope of our project and what we expect to co-create. TW1 activities included going for walks around the site and positioning AR markers to identify areas of interest and to help brainstorm alternative visualisations to tell stories. In the second workshop (TW2) we acquainted participants with the workings, possibilities and limitations of technologies. Our third workshop (TW3) focused on hands-on video content creation for VR headsets. We used a 360° camera, showed participants how to use it, recorded some content together and demonstrated how it is edited and incorporated into a VR headset. Finally, as a preparation for the content co-creation, the last workshop (TW4) took a form of a discussion where we collectively categorised the sentiments from the last 18 months, the stories identified, and which technological paradigm – AR or VR - they fell into. We finished with a walk around the site during which our participants also identified a suitable location where they would like visitors to experience a VR installation.

Data Analysis

The data corpus consisted of 16 hours of recorded and transcribed data from workshops and co-design activities, as well as field notes, sketches, photographs, paper prototypes, and 360° videos. This was qualitatively analysed using top-down thematic analysis [6] grounding our work in heritage theory to contextualise participants' design decisions. We derived initial categories based on heritage-specific research [61]. The analysis used working categories of authorised heritage, i.e. preserving stories and objects, local distinctiveness, personal and national histories. Categories were also informed by design research in heritage working towards visitors' interactions [17, 40]. Our approach situates participants' preference for technologies and interactive installations. The transcriptions were divided, coded, with initial themes revisited as new insights were gained.

FINDINGS

We present four themes derived from analysing our data. We describe how volunteers have their own understanding of 'spirit of place' which they connect to their personal histories with the site. In looking at how we co-created designs, we see how technology could breathe new life into the stories. As volunteers became more confident with technologies, they were able to challenge their limitations. In the following, names are anonymised with staff and volunteer indicated with (s) or (v) respectively.

Participants Interpret 'Spirit of Place'

Our heritage organisation uses 'spirit of place' to reflect the period its properties were built in and the aristocratic families that commissioned them, for example, specific displays, exhibitions and interventions have tried to embody the 'spirit of place'. Participants fondly captured the idea of comedy, theatre, drama, and almost 'mythical' stories about the family's antics. For example, Clara (s) described their

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playful nature, "*But there's also something about that sense of fun and flamboyance of the family that they were here, and they weren't ashamed of it".* Stories often included flamboyance and extravagance. This went hand-in-hand with exaggerating stories, being mischievous, playing tricks, not being apologetic and wanting to be noticed and seen. Josh (s) emphasised the importance of embellishment, "*it's changed, it's been exaggerated, it's been downplayed, whatever, over a period of time and kind of stops mattering* […] *And I think that's what theatre is. Theatre is a whole series of exaggerations over a period of time.*" The theatrical nature of stories was further brought out by volunteers who in the focus group pointed to the Central Hall's Gallery featuring architectural symbols of the family such as a harp.

During our ethnographic observations, we noted how volunteers would focus on specific rich contextual details which became their favourite narratives: exaggerating and overplaying where necessary. Participants have their own idea of 'spirit of place' thinking less about the values of a "traditional" country-house. Liam (v) describes this default position, *"The issue, for heritage properties at least, is they focus always on the aristocratic*." Josh and Beth (both s) discuss how they would rebel against the standard narrative: Josh began, "*And I think that, you know, I think that's just the way people see the [CC] because we have told loads of stories in the past but I think for whatever reason people have certain associations that they're set to",* with Beth replying, "*But we can, I think, here* [tell other stories] *because we're like a teenager, can't we?".* The approach to managing the property as a 'teenager' that can tell different stories is derived from the site's incompleteness. Josh explains later, *"…it's created a different type of opportunity […] a space that actually doesn't reinforce those stereotypes and the elitism that is associated with big country houses as well."* In this we identified the willingness of the management to provide different interpretation opportunities.

However, participants did not always challenge the spirit of place. Alongside mischievousness, one value shared by all participants was survival. The family avoided bankruptcy; the property survived the fire; its renovation; it evaded the fate of other countryside properties which were sold and either turned into hotels or demolished. When discussing such stories, participants often recounted them to us as they would deliver them in the visitor experience. This earnestness helped us further understand what they considered the 'spirit of place'.

Personal History with the Site

Our cultural probes were designed to capture the participants' emotional engagement with their stories. This was further encouraged by the choice of workshop room which was familiar and where they regularly met colleagues. It was the right place to share their personal and sometimes intimate connections to the property.

Margaret (v) talked about visiting as a child. She reminisced about going to school and looking at this impressive house. One lasting impression on her was how the recent lord of the manor did not give planning permission for building new houses which would be in view from the Hall. Connor (v) identified a similar childhood experience. He said his father was a vicar so they would walk to the church together. To his childhood self, the cellars were a playful space of interest. The front portico has a strong personal meaning too. When standing there and looking at the landscape, it reminds him of the times walking with his father. Caroline (v) speculated about her ancestors being involved with the family, saying she feels it is 'in her blood' being part of the place. Participants from both the volunteer and the management team reminisced of the first time they drove by the property. John (v) couldn't dare imagine what was inside whilst Clara was left in awe. She connects the place to her last memory of her father, driving by together. Such sensitivities to the place lead to a heightened sense of belonging.

For other volunteers, we found they liked to connect with certain histories they found interesting. Liz (v) expressed that when being in the Central Hall she can feel what is referred to as the aura of the place – she formed an invisible but deeply emotional link to the family who lived there 200 years ago. Similarly, Liam spoke about his favourite time of day as the 10 minutes before the Hall opens, where you can almost have the house to yourself and let it all 'sink in'. It is a moment of just being you and that place of history and stories. In relation to the previous theme, the expertise we cherish in the volunteers is not just about their stories of place, but their own history and even childhoods in relation to the place - they bring a rich context in terms of their complex, differing and temporally-bounded relationships to the site.

Stories Come to Life through Technology

In the first co-design workshops we provided participants with the freedom to decide how they would engage with technology and how that might shape visitors' experiences. Both sets of participants used technologies to facilitate an active exploration of the site. One commonality was designing complete experiences to engage multiple senses. Conveniently, their ideas were integrated within the physical space and meant that audiences would have to move through and interact with each installation. The designs were oriented towards managing visitors' flow, reducing waiting times, and ensured everyone having the same quality of experience regardless of when they visited the property.

One design was located in a turret room where visitors would activate a projection of historical characters and past conversations (Figure 2.a.). This prototype drew on participants' understanding of sensors as they imagined using motion, sound and light sensors to activate experiences. Participants considered how to keep the content continuously engaging where the visitors "offer" could be updated. Volunteers imagined core technology where content could be changed regularly, as Liam described, "*And so we then talked about how would it be something that was*

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Figure 2. a) Turret room design; b) The Confessional Can; c) AR walk; d) *Un-authorised View* content capture.

almost a static display or would it be something where the hardware existed but you could easily put different digital material in to quickly switch from one format to another, and how you do that; how you program that to keep it refreshed so that regular visitors coming back won't say 'I've seen that already".

Another design emerged from thinking about how to deliver stories for the over 18s in a family-oriented site. Participants brainstormed the content to be delivered and then developed the methods of presentation. As Beth described, "*…better interpretation is going to have a relationship with the person rather than a telling.*" The cards elicited conversation about flamboyance, mischievousness, theatre and exaggeration. Talk was unapologetic and led to the idea of a confessional. Thinking about how to situate that experience and the inherent spatiality of the confessional booth and how that related to the spaces available at the site (for interactivity), they somewhat profanely linked the idea of a confessional booth to a toilet cubicle. This had the potential to transform the visitors' toilets into spaces to confess their sins, write on the walls, and "judge" recordings of others – a *Confessional Can* (Figure 2.b.).

Despite creating imaginative designs, participants felt a need to design for authorised heritage narratives, 'spirit of place' and visitors' offer. Instead, our challenge was to encourage participants to connect and bring out personal stories in what they were making. Inspired by the talk of reinventing the house as a "different" kind of property, we identified this attitude as an opportunity to work with volunteers on unbounded content creation which might tell alternative and local stories which had not been previously considered.

Technology is Shaped by the Stories

From an early stage, participants had expressed interest in mixed reality technologies which could tell unique stories that would stand on their own. The explorations with extended reality technologies began with participants thinking about more authorised narratives e.g. the Central Hall fire due to its significance to the property and a desire to recreate this event using AR. This technological pragmatism allowed participants to start to experience their ideas. Participants showed this by gradually appropriating the technologies for themselves, starting slowly with these more authorised discourses, before bringing their own perspectives forward.

The AR walks provided a relaxed beginning (Figure 2.c.). Proceeding towards the Laburnum arch, one participant described the gardening team and efforts. He expressed dissatisfaction with the garden being overlooked because it is atypical for a house of this nature. AR could present an opportunity to explore the garden through the eyes of those who take care of it daily and see differently: its changes, its uniqueness and the questions about its provenance. A different suggestion enabled visitors to reconstruct parts of the building's architecture to contextualise its ruins. In that sense, participants saw AR as active and facilitating shared exploration of the site.

VR was understood as enabling different possibilities. Heather (s) recalled seeing another property which had a completely empty white room with an Oculus headset in it. The visualisation in the VR environment consisted of recreating what the empty room looked like. She remarked, "*So they are obviously moving ahead with it and I think the way we use it will have to be different to that experience of just curating things and putting them there. This is about telling stories.*" This fully came to light as we put a 360° camera at volunteers' hands. Tony (s) immediately thought about telling the story he knows best – a view of the gardens. He wanted to go down low to recording the growing of plants, thinking about the potential of such video made in spring as a timelapse. He also discussed the early morning landscape and wildlife present, the story of a stout family or barn owls. Prompted by his lead, participants eagerly identified areas of SD which they relate to or are otherwise inaccessible to visitors (such as sealed rooms or areas of construction and renovation). VR presented means to share these spaces through 360° films and animation. By the fourth workshop participants were capturing their own content rather than presenting existing collections or authorised stories. This design was titled an *Un-authorised View* (Figure 2.d.) – although we concede that these captures blended both authorised and personal narratives. Distancing themselves from overstimulating entertainment paradigms, volunteers envisioned a contemplative experience which invites visitors to relate to these stories and interpret the space through their eyes. The VR application has not yet been given public access and will be presented in future work.

Proposing a VR installation at a heritage site was met reluctantly by the management. As VR is an individual experience it was perceived as not facilitating the playful values of the site. Although volunteers' knowledge is celebrated in discussions, to present their personal stories these had to be communicated through ideas of 'spirit of place'. We mitigated such views by ensuring we would

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onboard visitors what to expect through the careful design of the setting where the VR installation will be positioned. Staff was further worried that simply recording videos would show visitors 'what's already there' rather than expanding the offer. Concerns were also framed around the production and aesthetic quality of the design. These informed subsequent content creation - alongside recording videos on site, we worked with an artist to help volunteers create abstract stop-motion animations.

DISCUSSION

We reported on a series of activities with volunteers and staff at a heritage site. This work supported participants in understanding technology and empowered them to use it to incorporate their own histories as part of the interpretation of the site. In our focus groups we used an environment familiar to our participants to further predispose them in sharing personal histories and attitudes towards technology. The co-design workshops provided tools to show them as 'experts of their experience' and to generate ideas [53]. We gained contextual knowledge and presented how these engagements opened space for participants to deepen their understandings of technology and its use on site. We built on this technological pragmatism by hosting four workshops to acquaint them with the technologies they had expressed interest in – AR and VR. Exploring VR and developing our *Un-authorised View* design, we believe we developed volunteers' levels of creativity as they were actively engaged with making and gained confidence in asserting their abilities and skills [53]. Through these steps we addressed the question of working with volunteers at heritage sites to blend their personal stories and hidden histories with the authorised narratives, to ultimately present un-authorised stories.

We proceed to discuss our analytic findings in relation to HCI studies that address design and community engagement in heritage sites. We reflect on how 'spirit of place' informs interaction design and propose a more suitable term for work with volunteers. We also discuss the importance of getting community participants hands-on with technology.

Introducing Volunteers as *Genius Loci*

In our background section, we acknowledged 'spirit of place' as a nexus of different ideas, lacking a uniform definition. Arguably, this is a reason to dispose of the term altogether, yet a possible solution is to adopt a working definition for the field of its use [7]. As so has been done in heritage, we understand that the concept of 'spirit of place' is deeply embedded in interpretation. Claisse et al. [17] discuss 'spirit of place' considering authenticity and uniqueness, stating there is a synergy between the heritage site and its collection, which creates the atmospheric qualities of a place. We diverge by highlighting the tensions 'spirit of place' may generate. The 'spirit of place' is not usually decided on by consulting local communities, it is predetermined by heritage institutions with a focus on trying to design *for* visitors' experience. Focusing on its relation to authenticity means that it is understood as an intrinsic and abiding property [37], limiting the plurality of values and experiences. We believe therefore our participants continuously distanced the stories they are meant to tell visitors and those they tell between themselves and about themselves. They interpreted 'spirit of place' based as much on the authorised narratives (which they still hold dear) as on their own connection to the site and personal histories. Yet they did not have the creative outlet to feel empowered to make these connections laudable.

In representing this collective attachment and plural heritages, we value volunteers as *genius loci*. We are inspired by the Roman origins of the term - a guardian spirit, both as accompanying a person throughout their life, and as the protector of a place. In heritage management, *genius loci* has been used synonymously with 'spirit of place' [29, 47] as defined above, with some work evoking its Latin meaning [9, 38]. It has been researched in landscape and architecture [3, 7, 56, 57, 67, 68], often in relation to phenomenology [42], and Bidwell and Browning [4] make a case for embracing it in interaction design for natural environments. In fact, the version of *genius loci* as guardian spirits has been deemed unhelpful for design as 'there cannot be many design professionals who believe in nymphs, fairies, or earth-spirits' [67]. We certainly do not believe in such 'beings'. Instead, we feel *genius loci* are people with close connections to the site who - by means of presenting the memory and by personalising the experience of a place - guard the site. We use the term to encompasses the role and contribution of heritage volunteers to heritage interpretation. Volunteers are experts, they are embedded in taking care of the site, and actively negotiate their role and relationships – within the site and with management. In using *genius loci,* we look beyond historical authenticity when informing design and ground it in personal experiences. The volunteers are then perhaps the spirit of place made manifest.

The gradual steps of our engagement have revealed the potential of designing with *genius loci* and led to our *Un-authorised View* design. It reflects volunteers' deep appreciation of the site, its less visited locations and the connections to the personal histories. Participants interpreted VR as allowing a more intimate experience of their stories. The captured locations are connected to personal and community histories, the spaces are interpreted by those who work in them every day, and personal anecdotes are blended with the 'spirit of place' themes of flamboyance and exaggeration. The VR content is created and curated by volunteers bringing their history alongside authorised narratives. For example, Caroline's video tells us about the impact of jackdaws in the local community and the birds' role in causing Central Hall fire. Liz traces how she changed since she became a volunteer and becoming part of the community at the site and the CC. These designs encompass the plurality, dynamism and layers of the heritage site and those engaged with it. Designing unfolds in a context of institutional, cultural and personal values and considerations. *Un-authorised View* is realised under such conditions. As Petrelli [45] suggests, designing for heritage is about how

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information and technology come together to orchestrate the visitors' experience where each element works in synergy with the others. In meeting management's expectations, we have taken the volunteers raw material and edited this to produce an 'authorised' visual experience for visitors. In every step of this process we are consulting with the volunteers to ensure we remain truthful to their stories.

As interaction designers we believe seeing volunteers as *genius loci* opens opportunities for discussion and broadening experiences of heritage. Designing with *genius loci* creates designs which encourage audiences to dwell upon how they belong to a place. We believe the term can be applied to existing projects. Schofield et al. [55] explores co-design with various communities who hold a very different memory and way of life associated with the site in comparison to the institutionalised interpretation. Capturing participants experiences as a new-born digital collection ensures their *genius* is voiced. Claisse et al. [17] also recgonises how eloquently design interactions can be based on what is important to participants – the layered history of the site – with the authorised story of the Tudors. Adopting *genius loci* means eliciting personal nuances often neglected when designing for spirit of place. In this way we contribute to designs representing [55]'s notion of plural heritages.

Getting Volunteers Hands on with Tech

We learned that to bring out and ultimately present un-authorised stories, participants should be trusted with and empowered to use technology on their own terms. We move beyond collecting their stories and instead give the ability to record and curate these for themselves. Here, it was important to fit into routine, e.g. use their work structure. Our work provided opportunity to carefully challenge established practices and allowed participants to begin their engagement in the study by doing 'their own thing'. Having the freedom to go from the default set of stories they are expected to tell, to reflecting on personal ones, to understanding how these stories interconnect, is a process worth facilitating.

We held sessions that would familiarise participants with digital technologies and interaction paradigms which helped address different levels of technological competence. We increased the visibility of their voices and supported them in capturing the imagination of audiences. They thought about how designs interact with other objects, visitors and the space, and negotiated their experience of digital technologies. Engaging with educational technologies helped stimulate their understanding of how technology can help them tell un-authorised stories. Our findings presented particular attitudes towards mixed reality which highlighted to us that although interested in the paradigms of the AR and VR, our participants assumed technologies' possibilities and limitations by what they had seen advertised and presented in popular media. In fact, we associate this familiarity as perpetuating normative authorised narratives.

To fully appreciate interpretation possibilities, participants should be involved in hands-on recording and co-creation of content as has been done in community heritage preservation projects [35]. We recognise such approaches are pertinent to HCI community work [18, 23, 28] and we draw inspiration from it. Yet thinking beyond their application to a heritage context, we relate their role to our approach [24]. Through building confidence in technology its possibilities unravel and make sense to participants. We are communicating to volunteers they have a voice which they are allowed to use creatively. It is at that point they equate technology to telling their story. Our participants worked the 360° camera, they engaged with the editing software, and followed the process of importing their content into VR and evaluating it between themselves. Referring to Tony, giving him the 360° camera meant he immediately thought how to communicate something only he knew by appropriating the technology. He imagined capturing video through his own eyes and experience. Rather than handing participants technology to make something with it, we recognise that our volunteers think through the technology. It becomes a site for social and cultural production which interacts with everyday experience [24]. Our participants did so in particularly nuanced ways thinking about feeling into time, knowledge of the site, placing it in different seasons and periods. Doing so encouraged imaginative reframing of the stories told and how these are created and communicated by volunteers. The approach gave participants newfound confidence and moved away from established norms of interpretation.

We highlight the importance of spending time with participating communities to familiarize them with the technologies they find interesting. This opened possibilities for improved interplay between the authorised and personal stories, thus, shaping the technology and its content.

LIMITATIONS AND FUTURE WORK

The 'OneTeam' approach has permitted us to represent the larger team and site, although we have only worked with a subset of volunteers (who were room guides). We concede that while our chosen technologies allowed volunteers to create working prototypes, we have only worked up our *Un-authorised View* design to production quality. Future work will describe its installation and evaluation.

CONCLUSION

In this paper, we reported on a qualitative study that challenges the authorised heritage discourse. We did this by recognising volunteers at heritage sites as experts of their own experience. We used the term *genius loci* to show how we help champion their own interpretations which are not institutionally authorised. We found that the best way to empower them was through building designs with them facilitated by long-term engagement where technology became gradually more complex, working up to letting them capture their own content. We advocate that the CHI community places technology in these groups' hands both to raise divergent voices in the space and create designs that better fit with their own practice and interests.

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