

# Design and Plural Heritages

## Composing Critical Futures

**Tom Schofield, Daniel Foster-Smith**

Culture Lab

Newcastle University

Newcastle-upon-Tyne, UK

{tom.schofield, d.foster-smith2}@ncl.ac.uk

**Gönül Bozoğlu, Christopher Whitehead**

School of Arts and Cultures

Newcastle University

Newcastle-upon-Tyne, UK

{gonul.bozoglu2, chris.whitehead}@ncl.ac.uk

### ABSTRACT

We make theoretical and methodological contributions to the CHI community by introducing comparisons between contemporary Critical Heritage research and some forms of experimental design practice. Beginning by identifying three key approaches in contemporary heritage research: Critical Heritage, Plural Heritages and Future Heritage we introduce these in turn, while exploring their significance for thinking about design, knowledge and diversity. We discuss our efforts to apply ideas integrating Critical Heritage and design through the adoption of known Research through Design techniques in a research project in Istanbul, Turkey describing the design of our study and how this was productive of sensory and speculative reflection on the past. Finally, we reflect on the usefulness of such methods in developing new interactive technologies in heritage contexts and go on to propose a series of recommendations for a future Critical Heritage Design practice.

### CCS CONCEPTS

• Human-centered computing~HCI theory, concepts and models

### KEYWORDS

Critical Heritage; Future Heritage; Plural Heritages; Cultural Probes

## 1 INTRODUCTION

In recent years, many authors in design and HCI have explored the place for new interactive applications of technology in heritage sites and institutions. The

potentials, for instance, of tangible interfaces in museums, locative technologies in outdoor and indoor sites [19,29] or embedded computation in artefacts [21] have brought encounters with the past into a conversation with digital technologies. Along the way, some researchers have emphasised the potential for such encounters to present new opportunities for participation, proposing co-design processes and techniques that allow for the development of more engaging, polyvocal, or provocative artefacts or spaces [19–21,66] that, in turn, enhance and diversify the experience of engaging with the past. With this paper we build on the methodological and conceptual contributions of some such authors but extend their critical context to progress the conversation around heritage, technology and participation to explicitly associate design and HCI work in heritage contexts with urgent, foundational concerns in the status of knowledge in heritage work. In particular we look to so-called ‘Critical Heritage Studies’ and related research to ask what ideas developing there around the status of knowledge, authority and participation might imply for design and HCI, both when working in heritage and, potentially, beyond. Beginning with a comparison of some key terms of reference across our two disciplines of heritage and design/HCI we continue by discussing some of our own research activities using now relatively familiar Research through Design (RtD) methods in a project in Istanbul. We introduce some preliminary findings from this work, before discussing some implications for future research arising from both our initial theoretical comparison and the outcomes of our research and thought processes around it. In doing so we contribute the following to the CHI community: a set of points of theoretical commonality between critical heritage work and contemporary design/HCI practice, provoking reflection on the latter; initial findings from the application of design methods within a heritage project conceived to explore critical heritage concerns with design methods; and finally recommendations for future design work which wishes to address relevant concerns in heritage practice.

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Additionally, we point to the congruence of our work with the theme of CHI 2019. Our research ‘weaves the threads’ of international communities, research methods and disciplinary identities to support the production of what we hope will be a stronger knot.

## 2 BACKGROUND: EXISTING HERITAGE WORK WITHIN HCI

The expanding domain of interest of third wave HCI has already established heritage sites in the form of museums, historical buildings or structures, and archaeological locations as relevant and compelling environments in which to consider the impact and potential of new interactive technologies. We briefly review some of this work here in particular to focusing on approaches which seek to engage visitors and audiences in co-design or participatory relationships with sites, organisations or communities. Our wider project work and theoretical perspective is aligned with such approaches and shares some of its methods but extends it through its evocation of theoretical apparatus from Critical Heritage Studies and the concomitant methodological implications of this combination. A more developed discussion of this in the context of our own research is offered in the discussion section.

### 2.1 Co-Designing Displays

Some authors have employed co-design or participatory methods in eliciting user contributions in the design of museum displays or other interpretive experiences. Ciolfi et al. [20] describe their deliberate and careful approach in designing to include user-generated content in two sites; a regional museum and a small airport, both in Ireland. Each work used a different form of physical interactivity (RFID tags and camera tracking respectively) but more importantly both built on a long period of design-oriented ethnographic work including observation of the space and people’s movements within it, interviews and informal conversations with stakeholders and potential users. This work built on previous research [6] which revealed,

[...] the significance of co-participation and collaboration in the museum experience and the ways in which the navigation of galleries, the discovery of exhibits, and the conclusions that people draw arise in and through social interaction. [6:1]

Other research [65] has focussed on how to create and maintain participation in such designs in areas with contested or contentious senses of community. In their

work in Byker, an area of Newcastle upon Tyne, UK which the authors describe as experiencing difficult social issues Taylor et al. note (citing [18]) that,

A shared heritage is one of the core aspects of a sense of community and sharing that history, even an adopted one, creates a sense of identity that defines the deeper bond that marks a community as more than just a collection of individuals.

Notable here is the notion of a holistic community operating to some degree in concert. Although the authors later note that communities are not necessarily homogenous [65:77] we will later problematize such holistic conceptions of community perspective from within the context of Critical Heritage Studies evoking the term ‘plural heritages’ to emphasise the role community heterogeneity plays in conceiving of community participation.

### 2.2 Heritage, Place and Technology

Other research has sought to use interactivity technology to enhance the experience of being located in a particular environment often by employing locative technologies such as GPS, local Wi-Fi networks or iBeacons.

Hornecker et al. [47] describe a set of proposed interventions in two historical cemeteries in the UK and Germany. Stating an interest in drawing on ‘*a solid understanding of the specific site, the needs and interests of user communities and stakeholders*’ [47:93] they develop a set of design proposals for interactive artefacts providing haptic feedback to guide visitors to points of interest or contextual information to augment their experience. The authors note the importance of sensory facets to the experience of place but do not explicitly connect these to issues in current heritage theory and practice.

Giaccardi describes a project which engages local communities in sound mapping an area of natural heritage. Of the work reviewed hers is perhaps closest to ours in outlook inasmuch as it recognises the activities of associating sounds with spaces not as the production of ‘*digitised content but in the philosophical sense of reality in a continuous process of actualisation.*’ [34:118] The creation of an interactive website containing a sounds archive is not proposed as itself productive of community participation but as a ‘*repertoire*’ for ‘*knowledge and social relations.*’ This perspective recognises the potential for technology interventions which are enmeshed in the production of situated knowledges.



Han et al. [37] describe a locative app development process which cites local participation as a feature. The authors stress the effect of a sense of local connection on participation in uploading and commenting on site specific features of a heritage app. However, this participation is of a reactive rather than a defining character with respect to the content and the study is principally concerned with usability and app feature design. There is of course nothing inherently wrong with this approach but when the authors note that,

While the contributions made through use of Social features can be interesting and reflect personal stories, these data are not official in their historical content [38:1152]

we respond that the it is exactly in these ‘non’ official histories that most exciting challenges for both heritage and design exist. A significant offer of digital technologies is the opportunity to present layered, contrasting or diverse perspectives be that through existing paradigms (e.g. comment threads or wiki edit histories) or through innovative interaction design. The connection between real-world locations and such heterogeneous views enhances this opportunity still further.

Outside of the context of heritage and HCI research some media artwork explicitly takes advantage of the affordances of network technologies to devolve a degree of power to community participants and presence their voices in digital public space. ‘You are here’ [36] created a local intranet based on cheap wireless routers located in public parks in New York, USA. The artists worked with local residents to produce audio content highlighting relevant local issues engaging in a year-long participatory project which to some extent devolved power to local residents.

A gap we observe in HCI research which is practically addressed by [54] but not theoretically articulated is that the opportunity for the integration or embedding of media content or other interactive experiences with physical spaces has yet to be wholly articulated as an opportunity to afford more diverse access for different community voices as in [36]. Although Giaccardi et al. explicitly make this connection for social media technologies [33] no other heritage and HCI work that we are aware of has fully taken on the significance of what we will later refer to us as ‘plural heritages’ in thinking about place, participation and technology.

## 2.3 Interactive Artefacts

Finally, and overlapping with some place-based heritage and HCI research some authors have explored the possibilities of developing artefacts which can be deployed in museums or other heritage sites to augment visitor experience.

Claisse et al. [21] describe the development of a series of tangible interfaces in a house museum in the UK. Their work uses familiar exploratory design methods in the form of cultural probes [32] to involve museum volunteers in the design of an exhibition. Of the research reviewed in this section Claisse and colleagues work embodies most closely the relationship we see between contemporary Critical Heritage and design/HCI practice. Again though, this connection is not articulated in authors’ published work and we feel that this underlines our contribution at CHI.

## 3 BACKGROUND: RELEVANT HERITAGE RESEARCH

Our project is founded in contemporary research approaches to heritage work that have so far had limited impact on the CHI and broader design and HCI communities. Although some preliminary work exists [3,66] there has yet to be a sustained critical discussion of the intersection of Critical Heritage and design/HCI and their introduction and discussion here forms a significant aspect of our contribution. We establish our particular frame of reference for heritage research from the outset to demonstrate its congruity with forms of exploratory design work and its potential to expand them. Our comparison will be organised around a set of three interconnected themes; plural heritages; notions of a critical heritage practice; and heritage as future-oriented. We will unpack these themes one-by-one while exploring their significance for thinking about design, knowledge and diversity.

### 3.1 Critical Heritage Research

In 2012, the association of Critical Heritage Studies produced a provocative, propositional manifesto [73] which summarised a number of key problematics for heritage theory and practice. Notably among these was a recognition that ‘The old way of looking at heritage – the Authorised Heritage Discourse – [that] privileges old, grand, prestigious, expert approved sites, buildings and artefacts that sustain Western narratives of nation, class and science’ is both euro-centric and anathema to the theorisation of heritage from a more diverse range of

epistemological perspectives, for instance those found in different, i.e. non Western or European, cultural traditions and those which value ‘bottom-up’ perspectives, in particular from community voices. Among their recommendations was to make a Critical Heritage Studies that would be ‘truly international through the synergy of taking seriously diverse non-Western cultural heritage traditions.’ Smith’s [63] notion of the Authorised Heritage Discourse (AHD) may resonate with designers engaged in other areas of participatory or co-design practice. An AHD is an authoritative and institutionally legitimised narrative deployed to make sense of the experience of heritage within an institutionally acceptable frame. For designers, sensitive to the concerns or perspectives of community members (as in our case, around a particular heritage site) AHDs invite comparison with solutionist design perspectives, perhaps those ‘affirmative’ design practices objected to by [24,25] in their common failure to acknowledge a more varied sense of knowledge, particularly inasmuch as knowledge is found to have sensory, creative, bodily, fragmentary, multivocal, spatio-temporally specific or other dimensions. In introducing such approaches from critical heritage to CHI, we indicate another anchor point for productive commonalities with other disciplinary initiatives in developing notions of diversity for HCI and design practice.

### 3.2 Plural Heritages

In particular we take from the developing canon of Critical Heritage [63,73] but also our own published work [61] the notion of plural heritages as a formulation which stands in opposition to the AHD. Where an AHD invokes an institutionally legitimated authority, the phrase plural heritages reminds us that,

If all heritage is someone’s heritage and therefore logically not someone else’s, any creation of heritage from the past disinherits someone completely or partially. [5]

The invocation of plural heritages therefore performs as a reminder that working with people in heritage contexts should not be an effort to integrate, balance or reconcile their perspectives on the past as expressed through design, but instead should valorize the particularities of those perspectives, exploring them in their personal, affective and partial dimensions. The difficulty of accessing such dimensions on their own terms is, we suggest, a place where existing design research methods might help, and where future methods might be developed. One possible approach is described in our study description later below.

### 3.3 Heritage as Future-Oriented

Of particular interest to us as designers and makers of new technological artefacts and systems is recent scholarship, related to Critical Heritage, that treats heritage as explicitly future-oriented. As perhaps the most visible exponent of this approach, Harrison draws on familiar critical resources in postmodernism and Science and Technology Studies,

...in seeing heritage practices of various kinds as enacting new realities through contingent processes of assembling and reassembling bodies, technologies, materials, values, temporalities, and meanings.’ [42]

The proponents of ‘Heritage Futures’ [28] adopt a constructivist approach to knowledge that, in common with much contemporary critical scholarship, rejects binaries between (in this case) intangible and tangible heritage, nature and culture or humans and non-humans [15,42]. For design research his exposition of ‘common worlds’ or ‘common futures’ shares ground both with participatory or co-design to establish frameworks for the co-articulation of aims and values and with the notion of design as ‘world-making’ activity, a construction of new possibilities for encounter. Heritage Futures work (also exemplified by [4,46,52]) is of urgent importance for both heritage and design work through its recognition that the participatory configuration of our existing research actively shapes knowledge worlds for the future. Our contribution to CHI is to extend this epistemological perspective into designing new technologies for heritage sites exploring what such an extension would suggest for design research methods

## 4 EXISTING CURRENTS IN HCI AND DESIGN RESEARCH

A central contention of this paper is that there are existing congruities between some design/HCI research which seeks to explore oppositional, counter-cultural or otherwise epistemologically diverse approaches to knowledge with the current state of thought in and around Critical Heritages Studies. Our hope is that by better identifying these shared concerns, we might enrich the conversation in each, improve potential for future design/heritage collaboration and support the pursuit of epistemological diversity. For the sake of clarity, we structure our comparison below into three aspects of contemporary heritage work introduced above: plural heritages, notions of a Critical Heritage practice, and heritage as future-oriented. We approach these in turn

and explore some initial relationships with existing research from the design and HCI communities.

#### 4.1 Critical Heritage and Embodiment in Design

The role of the sensory and the embodied in HCI and design thinking and practice is too wide and varied to be usefully reviewed here. It may well, however, be worth recalling how theories of technology and embodiment [22,39,40,57] have been influential in, for instance, developing approaches to feminist HCI, recognising the bodies of the differently-abled and enabling new critiques of tropes in contemporary computing such as the ‘myths’ of ubicomp [23]. Rosner et al. describe a project which highlights the contribution of women working at NASA focusing specifically on their embodied experience of building ‘core memory’ circuits [58]. Of particular relevance is the authors’ recognition that in doing so the women were ‘*building embodied, experiential knowledge*’ that itself constitutes part of a history of women’s work, historically perceived as separate from, and inferior to, ‘cognitive’ forms of masculine knowledge.

Some recent work in HCI has also highlighted the value of sensory, embodied experience. Brueggemann et al. playfully explore the implications of ‘gustatory’ exploration of urban spaces [14] while Khan et al. take sensory augmentation as a starting point in a design fiction scenario located in socio political environments rendered physical to users through its connection to the senses [48].

In Critical Heritage research Sather-Wagstaff has pointed out the value of ‘*experiential, senses-inclusive meaning-making*’ as a challenge to ‘*purely cognitive forms of knowledge construction*’ [60] describing the effects on the body of moving through sites of difficult heritage, concentration camps, former prisons or sites of torture. Similarly Macdonald [50] invokes notions of ‘*feeling the past*’ to emphasise the embodied and sensory nature of engaging with the sites and objects of what has come before. These two distinct strains of scholarship share some important antecedents in the continental philosophy [45,51] of phenomenology but have had little discussion together as they might contribute to a discussion of design for heritage.

#### 4.2 Plural Heritages and Participatory Design

We have said that a key notion for some contemporary heritage practice is the understanding that a mono-vocal and centralised narrative, particularly concerning value (cultural, pecuniary, symbolic or other), is anathema to a

sense of ownership, involvement, agency and control on the part of interested communities. A key target of such criticisms is the 1972 UNESCO convention [68] which recommends ‘*the protection of the cultural and natural heritage of outstanding universal value*’ with some authors pointing out that the privileging of a notion of ‘World Heritage’ actually produces division [17]. Typical barriers to participation, recognised in design, are also theorised in heritage contexts including, for instance, lack of access on the level of language, nationality (allowing access to territory) and exclusionary bureaucracy, or a lack of respect for vernacular practices. Most insidiously, in the UNESCO context, these barriers are rendered invisible behind a double exclusion [17], a denial of representation concealed behind token inclusion.

Discussion of participation in design and HCI has brought design research into closer dialogue with a series of perspectives that connect to critical heritage concerns. Bardzell [8] draws together existing threads from HCI and design research to establish a series of feminist concerns for future interaction design practice. Of particular interest is her citation of feminist epistemologies and feminist standpoint theory [41] in particular, providing another example of the importance of knowledge diversity for participatory practice. Meanwhile de Oliveira et al. [53] comment from a post-colonial perspective on design’s potential for foregrounding knowledge which is in some way ‘other,’ allowing it to be recognised as such. They propose speculative design activities as potentially helpful in imagining disruptive forms of participatory democracy. Soro et al. [64] have explored the use of technology probes as a tool for co-creation in cross-cultural dialogue with Australian Aboriginal communities. Particularly relevant is their claim that this activity ‘*restor[ed] some interpretative power in the hands of the community*’ affording a broadening of participation beyond the design team.

Also pertinent in a comparison of participatory configurations between heritage and design/HCI is some consideration in the way that relevant communities are included from the outset. Vines et al. [70] note how the active configuration of participatory processes by researchers is strongly influential for the outcomes. The authors advocate attention to the forms of participation, who initiates and benefits from it and to the balance of control between researchers and participants. Other authors note how participatory design has engaged with emancipatory politics and utopianism [7] or assisted in the design of urban spaces to support cultural diversity [67].

The examples cited underscore an understanding that the recognition and valorisation of an expanded set of epistemological perspectives is key to a critical design or heritage. Both heritage and participatory design practices share common preoccupations with participation and representation. Both suffer from the difficulty in supporting the co-existence of conflicting accounts of value, and in both genuine participation is difficult to discern from that which is token or instrumentalised.

### 4.3 Heritage Futures and Future-oriented Design

Lastly in our comparison we look to the interest in the future held both in design and heritage communities. Within contemporary heritage research, thematics for the future including uncertainty, transformation, profusion [52] and diversity [44] have been applied to domains as diverse as biodiversity management [43] asking how a radically interdisciplinary approach to studying conservation practices might stimulate creative ideas for considering the future value of things. Lowenthal [49] notes how the contemporary short-termism in thinking about the future is both founded in some of the more unpleasant contingencies of 20<sup>th</sup>/21<sup>st</sup> Century politics and is ultimately deleterious to our commitment to the planet we share. What his paper highlights particularly to our interest is how a theorization of the future of heritage functions as a useful, actionable, critical lens on the present, an interest shared with Holtorf and Högberg [46] as well as much future-oriented design practice.

Bridging our two disciplines of interest Arrigoni et al. [3,4] discuss, inter alia, the value of design prototyping activities in heritage contexts to query the processes by which collections objects come to be thought of as heritage, noting the role of museum collections in configuring cultural perspectives on the future. As such, Arrigoni's work is concerned with the generative potential of museum objects for the future.

In HCI and design research a host of approaches for imagining socio-technological futures has found enthusiastic uptake. Creative and imaginative techniques including the development of provocative artefacts and prototypes articulated variously as critical design [25], counter-functional design [55], and provotypes [59] all represent attempts to imagine not only the objects or systems of possible technological futures but also to consider how social worlds might form around them. Candy and Dunagan's work on experiential futures provides a framework for rendering the circumstances of future scenarios concrete in order to better catalyse

insight and change [16]. Among their resources for doing so is to encourage sensory experiences by building situated experiences, visited by participants during events. For the authors the focus on minutiae supports a different kind of world making, one that turns away from grand scales. Finally a large body of work exists developing various forms of 'design fictions' e.g. [10–12,72] which draw on the speculative and imaginative resources of fiction to develop provocative future scenarios.

There is then a methodologically diverse but conceptually congruent set of concerns around creativity, values, communities and the future held across heritage and design research. Our suggestion is that a better integrated literature and practice might support each discipline both separately and when undertaken together.



**Figure 1: The Theodosian (Land) Walls near the area of Sulukule.**

## 5 PRACTICING DESIGN AND PLURAL HERITAGES

Hitherto we have confined ourselves to pointing to existing or potential relationships between some forms of heritage research practice and some types of design. We have shown that as well as sharing some theoretical antecedents, a shared concern for exploring poly-vocal understandings of value and the implications of such an approach for worlds of the future is held in common. Below, we discuss some initial steps from our own research that begin to bridge the disciplinary gap.

### 5.1 Project Context

Our project [71], based at Newcastle University (UK), Bilgi University and Bursa Uludağ University (both Turkey) and positioned in response to a heritage-themed funding call from the Arts and Humanities Research Council seeks to explore a 'plural heritages' approach to a UNESCO World Heritage Site through both contemporary heritage methods and design interventions.

The Th eodosian Walls of Istanbul are a Byzantine defensive structure, originally defining the rear or Western perimeter of Istanbul (then Constantinople) and now extending around six kilometers across the peninsula. Known colloquially as the Land Walls (to distinguish them from the sea defences which skirt the peninsula), the structure and its immediate surroundings are one of four ‘Historic Areas of Istanbul’ inscribed on the UNESCO World Heritage List in 1985. Central to our broader research enquiry is the problematisation of what we and others [62] consider to be a token engagement on the part of the site managers with stakeholders of the site, communities whose past or present lives are in some way involved with the Walls. A later outcome of our project is to be a set of linked locative media interactions locating imaginative, speculative and personal reflections on the Walls, drawing particularly on the sensory and embodied experiences of communities which together will provide a counterpoint to the current narrative as deployed in interpretation signage and in a ‘panorama’ museum sited nearby. This existing heritage narrative, the AHD of our project context, is predominantly concerned with the conquest of the Walls in 1453 by the Ottomans and is conspicuously un-concerned with the many hundreds of years before and since, during which people lived, died, worked and walked by and on them.

## 5.2 Cultural Probes for Critical Heritage Design

The use of so-called cultural probes as an ethnographically-oriented design method has received significant attention in ACM communities since the original interactions article in 1999 [32]. We are mindful of the admonishments of Boehner et al. [13] that the relative ubiquitousness of this technique in RtD has risked undermining what for many, including some of the original authors, has been proved to be the main offer of the approach [31]. That is that cultural probes may be at their best when they promote uncertainty and creativity, prolong provisionality in design processes, allow tangential responses from participants and when they are not taken as producing direct design recommendations. Our use of cultural probes was intended to provide a forum for meeting participants through a kind gift-giving exchange supported by the probes’ careful design, an advantage identified in a heritage context by Claisse et al. [21]. Our probes were, as is typical, presented as a packaged set to participants (see upper right in **Error! Reference source not found.**). Although our probe designs were relatively simple, a number of participants

commented positively on their presentation and cited this as a factor in their enjoyment of the activity.



**Figure 2: A selection of our probe designs.**

In creating the probes, we were most interested in the capacity of the associated activities to speak to our three approaches in heritage work: criticality (and in particular the valorisation of sensory and embodied perspectives on the past); plurality (multi-vocal and conflicting accounts for heritage; and future-orientation (particularly in considering how imagination and speculation might play a part in future heritage narratives). We have framed our use of cultural probes against a background of co-design work in heritage and HCI. We note however that probes do not in themselves constitute a co-design process but point to their shared concern with pluralistic perspectives within a design space.

Of the four authors of this paper, two have backgrounds as heritage scholars and two in interaction design. Bozoğlu, originally from Turkey, in an earlier phase of the project conducted a series of around eighty ethnographic interviews, mostly while walking around the UNESCO site and surrounds with residents. The participants to our cultural probes study were drawn from this larger group who were recruited through a mixture of approaches including chance encounters (approaching people in public space and soliciting their involvement), contacting community groups and NGOs, and snowballing (word of mouth introductions from one participant to another). Over the previous six months of the project Bozoğlu had developed close relationships with many of the participants, engaging in social activities, paying social visits and acting as a liaison between them and the wider research team only one of whom speaks Turkish. The whole team continued to maintain contact with the participants after the probe study was completed through a later co-production project phase and also through a series of events in which we shared outcomes from the



various stages of our project and invited their contributions.

**5.2.1 Participants.** Our probe study was relatively small in scope, consisting of five long interviews (between an hour and five hours) with eight individuals drawn from local communities. All interviews were conducted chiefly in Turkish with one of the current authors acting as both interviewer and interpreting for others. In some interviews, members of the extended research team assisted with translation. All names of interviewees have been changed. Although the small scale of this activity precluded the possibility to produce a demographically representative sample it is the case that our interviewees were relatively balanced in terms of gender (three females and five males), relatively homogenous in age (late thirties to mid-sixties) and came from a cross section of Istanbul society with variations in ethnicity, religious creed and socio-economic status, as self-identified. As stated above, all participants had previously taken part in an earlier phase of ethnographic walking interviews, conducted by our colleagues and focusing on their experience of place and the past. The probes therefore represented an opportunity to enrich existing interview data with more oblique perspectives and perhaps even a flavor of the unexpected. Participants were given the probe pack at least one week before the interviews took place and asked to complete as many or as few of the activities as they wished. Observations and analysis below are based on notes and quotes taken live during the interviews and a full professional translation and transcription. Names have been changed to protect anonymity. These were all subjected to a light thematic analysis. For the sake of completeness, we describe all the probes in our pack. However not all probes feature in the interview responses below due to space constraints.

**5.2.2 Probe Designs.** Our probe packs contained five individual activities which we hoped would encourage responses distinct from those gathered during the previous, large ethnographic phase of the project. In particular we were interested in the capacity of the probes to encourage forms of sensory remembering, personal and emotional accounts of the past and also imaginative or speculative perspectives on the history of the walls. None of the probes had formal titles shared with participants and so below we treat their descriptions as working titles.

**5.2.3 A Tour of the Walls for someone who died before you were born.** Participants were asked to plan a tour of the Walls for someone of their choosing from the past who

died before they were born. They were asked to label the places they would take this person and why they would



**Figure 3: The complete probes set.**

take them there and finally to draw the route they would take between the locations.

To support this activity we designed a foldable map of the local area visible at the top left of Figure 2 and in Figure 5 (bottom left). Our hope was that by asking participants to pitch their tour to a particular person from the past, they would personalise their responses away from generic descriptions of the history and architecture. We assumed also that the choice of figure would also provide a fruitful line of discussion in interviews afterwards.

**5.2.4 Mapping the walls' experiences.** Participants were asked to cast themselves into the Walls' perspective and imagine where they had witnessed areas of conflict, emotion, change and community. These purposefully broad categories were intended to leave the participant open to interpret the type of conflict, emotion, change and community and express them as they saw fit. The participants were tasked with drawing these areas on a similar map to the activity above (top left Figure 3) and labelling the types of 'conflict, emotion, change and community' the walls have experienced. By effectively asking participants to anthropomorphise the walls and by providing purposefully provocative but ambiguous categories we again hoped to evoke affective and perhaps imaginative responses.

**5.2.5 Sound Diary.** Participants were asked to record sound clips that they felt were representative of a location around the Walls as they went about their daily routine using their mobile phone to do so. We recommended free apps for Android and iOS for this purpose. Using the diary provided they were asked to record when and where the



recording was taken. Of all the probes, this was the most minimal in terms of our design input which was restricted to adding an explanatory cover to a notebook (visible in the top right of Figure 3). We were interested in how participants might select, describe or reminisce about elements of the sonic environment in Istanbul but had some concerns that the technical demands of producing even a basic recording might be burdensome for some participants. As it transpired, this reservation was justified (as discussed below) but our (perhaps basic) intuition that focusing on sound as a feature of interest would lead to rich and idiosyncratic interview data was more than born out in practice. In fact sounds and other sensory recollections were a dominant feature of our interviews.

**5.2.6 A letter to the walls.** In this activity we asked participants to imagine the Walls as witnesses to past events and to imagine that they (the Walls) had the capacity to answer a question about them. We provided letter writing materials (seen at the bottom right Figure 3) and asked them to address a question to the Walls and to specify the particular location as an address on the envelope. Of all the activities we proposed, this was the most overtly speculative. We drew inspiration from the phrase ‘if walls could talk’ (which happily exists in the same form in Turkish) and speculated that this foundation would help contextualize the activity for participants.

**5.2.7 Flipbook.** In the final activity, participants were provided with a set of cards, blank except for a data field at the top right and a space for a caption at the bottom. The cover card with basic instructions is visible second from top left in Figure 3. The instructions asked participants to ‘depict events that happened around the Walls and the approximate date that they happened.’ We specified that this depiction could be in any form (including text description). The motivation behind this activity was to provide a more specific framing over responses as concerned with historical events. In previous ethnographic work we and our colleagues had been at pains to avoid providing prejudicial framings of past events as heritage with a capital ‘H.’ One of the chief intellectual concerns of our broader research project is that the notion of what does and does not count as heritage is a matter of ongoing and situated negotiation. In this activity we were curious specifically as to whether participants would choose to reference notable, known events from the history of the Walls (such as the 1453 conquest), aspects of what we have already described as an ‘authorised heritage discourse’ or, in contrast, choose

to narrate more personal histories, stories from their own pasts.

## 6 FINDINGS

Below we discuss some of the findings of this activity as they answer our three points of interest for the intersection of contemporary heritage and design concerns. In defining the focus of our analysis narrowly we make a deliberate choice not to assess the performance of the probes in our study design as well or badly designed, or as successful or unsuccessful in informing the design space for technology deployments later in our project. A fuller analysis will be forthcoming in later publications including a fuller description of those deployments. In the findings we present at CHI, we wish to focus specifically on the extent to which the results of our probe activities spoke to both a design and Critical Heritage agenda and to consider afterwards in discussion what this may imply for the design of future studies which locate interaction design research in heritage contexts. Consequently we structure the following findings initially according to three features relevant to Critical Heritage Studies and subsequently discuss their implications for design and HCI research.

### 6.1 Sensory and Embodied Knowledge

It is no exaggeration to say that the discussion in much of our interview conversations was richly sensory and bodily in character. Sounds, and in particular the lost sounds of the past, were a recurrent theme for the interviews with seven of eight participants making explicit reference to the sonic environment as a feature of interest. These reflections occurred not only in the context of the diary of sounds but were also a feature of other activities including ‘mapping the walls experiences’ and ‘a tour of the walls.’ The call of cicadas in Istanbul’s hot summers, children playing in the streets, the cries of seagulls, milk and yoghurt sellers hawking their wares from a street cart, and the loss of silence thanks to increases in traffic were all mentioned by participants, some of whom were visibly moved by the sense of loss evoked by discussing the impoverishment of the sensory environment and in some cases the culture that supported it. This phenomenon was particularly poignant in our discussions with two members of a displaced Roma community, Yusuf and Erdal. Yusuf did not initially complete the tour activity but when asked about it chose on the spur of the moment to propose a tour to a member of the research team (Schofield) with whom he had become friendly. His tour was of the two’s home area, Sulukule, which was

previously an entertainment district where Roma families would entertain paying guests with food, drink and live music and dance. After forced evictions and the destruction of the Roma housing in 2009/2010 [69] many former residents were relocated to distant suburbs, which had none of the character or employment opportunities of their former home. Sulukule was understood to have a claim to be the oldest Romani settlement in Europe with around a thousand years of continuous habitation. Experiencing near constant discrimination throughout this time, residents were later subject to a sustained campaign of harassment by local police in the early 1990s resulting in many entertainment houses being shut down with many losing their livelihoods [26:41]. This background of injustice strongly informed Yusuf and Erdal's situated perspective on the area and was referred to repeatedly throughout the interview.

For Yusuf and Erdal, an imagined walk through the streets of Sulukule as was, was a walk experienced through music escaping from houses. The word continually employed by both Yusuf and Erdal to evoke the experience of their neighbourhood was 'taste'. The 'taste' of Sulukule was that of 'a street where all activity happened. Eating, dancing, fighting, belly-dancing' contrasted with its current status as 'an empty street of rich Syrians' as Erdal put it (see Figure 4 for a view of the housing built on the site of the former community).



**Figure 4: Sulukule as redeveloped (photo taken in 2017)**

Our discussions with participants strongly support Sather-Wagstaff's [60] claims for the value of considering the sensory as a central facet of knowledge construction and consequently of significant interest when considering the significance of heritage sites to people. The evocation of sonic or other sensory phenomena was not peripheral to the memories that participants discussed but played a central role in defining their recollected experiences. In many cases, our interviewees focused on the visual, olfactory, haptic or auditory as the primary object of

discussion. In another participant's 'tour of the walls for someone from the past' he painted vivid images for us of how one corner of the Walls, near to their intersection with the Sea Walls on the South side of the peninsula, was once a place where freshly dyed headscarves were hung out to dry. His evocation of the bright colours of the many headscarves was the central point of interest at this stop in his 'tour', not a background to events taking place around them.

Another participant, Emir, related many of his recollections to the particularities of his physical engagement with the landscape of his childhood. In describing his 'tour of the walls' he vividly recalled the sensation of scrambling up parts of the walls with school friends, the coolness of cemetery gardens, the feel of dirt on skin, and the fatigue of carrying water home for his mother. His imaginary tour of the Walls was conducted by bicycle with a romantic partner from his past (he had elected to disregard the constraint that this person should have passed away before his birth) and this mode of transport strongly influenced his path of recollection, as he replayed for us the cycling routes the couple took in the past, the places they sat holding hands and the areas where they climbed the walls to enjoy the view together. Emir's recollection was strongly situated in the physical environment as he described his movement through it.



**Figure 5: An interview with one of our cultural probes**

## 6.2 Pluralism

Perhaps because of the relative open-endedness of the cultural probe activities and their design to encourage personal reflection, they seem well suited to the

generation of pluralistic narratives about the past. An advantage they hold over, say, a semi-structured interview focusing on the personal histories of an interviewee, is in the capacity of the designs to encourage a sense of connection between different times, places and people. One of our most successful probe designs was that based on the common expression ‘if walls could talk.’ Many participants’ responses asked the walls to bear witness to historical scenes during the 1453 conquest but, importantly, explicitly related these to their own socio-political concerns. One of our participants from the Istanbul-Greek community, Kostas, wrote to the walls asking them to confirm the veracity of a theory regarding the conquest. According to this story, the breaching of the Walls was not a triumph of military and engineering superiority but was, in fact, an inside job with various theories offered as to the culprit and her/his motives. In his words,

Because if we could get an answer to this question, history could change dramatically. Was Istanbul conquered, or handed over?

What was most compelling about Kostas’ discussion of this was that his reading of this story prompted speculation as to the area of the city which gave home to the traitor. Kostas reflected on the possible motivations of residents of different historical areas of the city then and now, considering how the uneven distribution of power in historical Constantinople and contemporary Istanbul might have played a role in defining the city’s history.

In the activity ‘mapping the walls’ experiences’ he went into a significant amount of detail identifying elements of change, begun with the conquest. He discussed its legacy for the ethnic make-up of the city and the location of particular communities,

Communities left themselves. No one wants to live in the middle of a war zone. No one wants to live there without knowing what might happen in the future

as well as the effect of the conquest on language,

Think of it as the introduction of Turkish language. The most important change was that the ongoing order suddenly and drastically changed in this area. One reason for this was that the Ottoman army entered Yedikule on 10th of August 1453

The provocation of the probe activities, we suggest, gave enough shape and enough permission to the imagination to encourage this kind of integration of

historical reflection and observation of contemporary social phenomena.

### 6.3 Speculating on the Past, Imagining the Future

The qualities of imagination, speculation and creativity form our last focus of consideration. We consider these vital for thinking about future heritage when,

Central here is a plural notion of heritage ontologies-understood as the world making, future assembling capacities of heritage practices of different kinds-and the ways in which different heritage practices might be seen to enact different realities and hence to assemble radically different futures.[42]

In such a picture of an assembled, constructed and contingent terrain of heritages we look to the imaginative capabilities of people to make their own sense of the past and build on it for the future. We have already described Kostas’ speculative activities based on our ‘if walls could talk’ probe but other participants’ responses to this revealed an equally rich and imaginative questioning of the past. Yusuf, for instance wished to ask a question of the Walls which had strong resonances for his sense of the future. For him the truth or untruth of a particular event strongly coloured the significance of the conquest, and by extension the Walls. His question related to the time immediately after the conquest of Constantinople. In a commonly repeated story, Sultan Mehmet II, (sometimes called ‘Fatih’, i.e. ‘the Conqueror’, whose dates are 1432-1481), reads a firman, or edict, guaranteeing justice to the conquered citizens, regardless of their religious persuasion or ethnicity. For many, the Sultan represents an ideal of wisdom and fairness in a ruler and it is perhaps for this reason that he was invoked in the interview. Yusuf wished the Walls would tell him whether indeed this event had taken place and extended a question to the Sultan himself, asking what he made of the injustice Yusuf and his community had suffered at the hands of the municipality (named Fatih after the Sultan). This imaginative projection into the past questions its value for the interviewee and thus its role in shaping his perspectives on the future.

## 7 DISCUSSION

By introducing relevant currents of contemporary heritage research, we believe for the first time significantly to the CHI community, we hope to expand the scope and reach of design work in heritage contexts while posing provocative challenges for design in the process. We have already noted that existing work has

taken place in design/HCI which seeks to apply co- or participatory design principles as well as forms of experimental design practice in heritage contexts. Typically, however, this work differs in aims from our own. We briefly delineate these here in order to clarify our contribution.

Common to [19–21,29] is a focus on audience/visitor experience within heritage sites or institutions. Ciolfi et al. for instance are,

...concerned with understanding, supporting and augmenting visitors' lived experiences in context, [and] thus their ability to actively participate in an exhibition.' [19]

The purpose of co-design and participatory methods in the study cited above is to speak to a more holistic conception of experience within an exhibition context, relating content more directly to those who feel themselves involved by virtue of being a visitor, a curator, the subject of an exhibition (e.g. belonging to a community described or represented there) or some mix of all three. Techniques developed are intended to foreground representation from such stakeholders, to better understand their motivations or requirements and to develop more inclusive institutions. Our work is less immediately concerned with immediate experiential issues in exhibitions and display (though we respectfully acknowledge the rich conception of experience and participation developed by the authors above); rather, we are more interested in the capacity of design techniques to act as a basis for evoking the sensory and embodied experience of the past. Thus, although we share an interest in RtD workshopping design methods, we diverge in motives for their application.

For Claisse et al. [21] the usefulness of design methods such as cultural probes speaks to what is perhaps a more wide-reaching aspiration for design work in heritage contexts. Their study was conceived to empower the volunteer community responsible for the management of a 17<sup>th</sup>-century house museum in the UK by providing avenues for the volunteers to shape exhibition artefacts (a set of tangible interactives) themselves. This included, for instance, developing designs that incorporated their own recorded voices and handicrafts in the exhibition. This research provides useful reflections on working with RtD methods in a related context but differs from ours inasmuch as its aims were not to radically reconfigure the sense of the past as told through the site and its augmentations. We identify commonality with this work in its recognition of the value of sensory and in particular tactile or haptic interaction in evoking an embodied sense

of the past but extend its scope and aspirations by relating such experiences directly to claims for the status of different kinds of knowledge held to be more or less significant both for heritage and design. In short, we agree that sensory and embodied knowledge is both undervalued and vitally important when experiencing the past, but suggest that the significance of this observation has more radical implications than for making design recommendations for interactive exhibitions (though of course this is an entirely valid reading also). On a practical level, the absorption of critical heritage literature such as that cited suggests not only possible outcomes in the forms of designed artefacts or systems but an expanded repertoire of exploratory methods that are more consciously geared to provoke the kinds of reflection we experienced with our cultural probes. Here, we think that RtD research is in an excellent position to innovate on existing methods to better explore the past with people along these lines.

The explicit recognition that working across our three themes in designing for heritage represents a qualitatively different approach from those above, and has methodological consequences is the basis of our claim for a contribution at CHI. We point to the way that such perspectives may provide another resource to enduring conversations about the value of designerly knowledge as discussed in seminal texts for RtD such as Frayling's initial evocation of a thinking which is 'so to speak, embedded in the artefact' [27] and to aid with a view of design theory and practice which is 'provisional, contingent and aspirational' [30]. We observe the congruity of perspectives on a more expanded ontological focus [42] for heritage work for example as applied to developing feminist perspectives on the materialities of museum objects [9] with recent interest in the CHI and ACM communities as it pertains to a post-colonial HCI [1] or to designing with an expanded sense of the scope of ethnography [35], an approach echoed in recent work in archaeology [56].

In introducing these concerns to CHI we anticipate that some readers may question the direct applicability of our approach to the development of specific interactive technologies. Indeed, our study and the methods it advocates are not intended to identify design requirements for the development and deployment of technologies or systems. Within our own longer project in Istanbul, the cultural probes work is intended to sensitize us as designers to the personal interests and concerns of community participants, to help us delineate and

understand our ethos in working in that context and only later to inspire us to create innovative interactive experiences which build on what we and participants to our project have experienced. Our contention is that our theories and methods may occupy a similar place in other HCI projects which share a critical interest in heritage.

## 8 FUTURE WORK

Our study was small in scope, comprising only one small element of a much larger research project, but our research team was surprised by the denseness and richness of the interview data and its capacity to speak to concerns both in Critical Heritage and design/HCI. There is obvious potential to expand and refine our existing approach in terms of the probe designs themselves, notably redesigning them as more explicitly sensory provocations. We also aim to finesse the process itself of designing the probes, perhaps conceiving of ways that this might be conducted in tandem with participants to the research. In our existing work, this stage was undertaken with only some initial interview data from early ethnographic work and no element of co-design. We feel that there may be ways to shape this activity in ways which better respect both the agency of research participants and the professional and research skills and experience of the research team.

In upcoming work, we wish to extend the scope of our activities to include other promising co-design techniques. We are interested, for instance, to consider how Anderson's work [2] prototyping for sound and instrument-building might be refactored to provide new ways of reflecting on the sounds of the past. Similarly, adapting bodystorming [54] techniques to heritage sites may represent a productive starting point to further explore kinds of embodied recollection.

Principally though, we are compelled to consider the immediate design implications for our later locative deployment as part of our ongoing research project in Istanbul. Although we have so far resisted the motivation to translate the findings of our interviews as orientations in designing for our proposed outcome, we will, in future published work, explore more thoroughly how we might sensitively build on what we have learned.

## 9 CONCLUSIONS

We have shown that there is significant shared theoretical background, clearly identifiable common terminology and points of shared theoretical interest, contexts for

application and some promising related work between areas of design/HCI practice and contemporary research around Critical Heritage. Our observations from our short cultural probes study underline the applicability of some RtD techniques in exploring a design space for the development of new interactive technologies. Finally, we believe that a much broader range of existing techniques might be productively repurposed to better contribute to a Critical Heritage design practice.

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