

**Place-centred interaction design: situated participation and co-creation in places of heritage**

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# *Place-centred Interaction Design: Situated Participation and Co-creation in Places of Heritage*

## Luigina Ciolfi

This paper argues that the design of interactive installations for museums and other heritage sites should be concerned with understanding, supporting and augmenting visitors' lived experiences in context, thus their ability to actively participate in an exhibition. We use the concept of 'place' to refer to the physical environment as it is invested by the qualities of human experience, and to placemaking as the active process of connecting and relating to locations that become meaningful in our lives. We will discuss some of the limitations of existing heritage technologies in considering aspects of active place experience, and will argue how a place-sensitive approach can lead to successful interaction design whereby people establish meaningful and active connections at personal, cultural, social and physical levels to the places of heritage they experience. Through understanding place experience, and designing interactional possibilities that support the visitor experience by allowing people to actively engage and contribute to exhibits, or – in other words – 'making places', interactive installations can 'augment' the museum in several ways. We will support this argument by presenting a series of projects conducted by the Interaction Design Centre that were guided by this approach, and by showing how visitors were actively involved in the creation and sharing of heritage.

The relationship between museums and other cultural heritage sites and technology has long been under scrutiny. In early examples of technological support for museum visits, visitors have often been thought of simply as passive recipients of content that was pre-prepared by curators, educators or professional guides. However, this attitude has changed by the recognition that visitors have a far more active role: even in a scenario where they are at the receiving end of content while visiting an exhibition, visitors still actively interpret, share, discuss and appropriate it. Moreover, visitors can be encouraged to play an even more participant role by eliciting their comments, reactions and even original contributions to an exhibit or a site. In other words, visitors can ‘make’ what a museum or an exhibit is and how it is experienced as much as professional museum staff. Simon (2010) observes how participation, independent of the use of any high-tech system, has increasingly become a concern of museums, and how even low-technology strategies for engagement can be successful in making visitors active contributors to heritage sites. Technology has not fully facilitated this until very recently, often imposing restrictive interaction frames on visitor activities.

However, a novel trend of research has emerged within Interaction Design to support users’ active appropriation and reconfiguration of technology, and this approach has influenced work on technology for museums and exhibition sites. Previous research has examined aspects of situated conduct in exhibition environments, and explored the reconfiguration of activities visitors perform around technological installations deployed in such settings: for example the SHAPE Project (Bannon *et al.* 2005) developed room-sized interactive installations based on an understanding of situated activities in museums and allowing for rich interactions around them. At Nottingham Castle (UK) (Fraser *et al.* 2003), the installation involved participants in a quest for historical clues about the castle that sub-

sequently allowed access to virtual reconstructions of the site. At the Hunt Museum (Ireland) (Ferris *et al.* 2004), visitors were invited to use technology to investigate mysterious artefacts from the collection and to contribute opinions on their provenance and possible original use. More recently, other projects, such as *EQUATOR*, have featured exploration of similar issues in a broader range of settings, such as urban spaces (Benford *et al.* 2006, Brown *et al.* 2003). These examples show that interesting sets of experimental installations have been realised: however, they are still limited in offering a more generalisable approach to designing participative technology in heritage and exhibition settings that could inform and guide further work.

Attempts at proposing frameworks for the design of public interactive installations are very abstract and usually extract features of behaviour, rather than the richer qualities of visitor experiences. Brignull and Rogers (2003) formalise examples of interaction around public and shared displays through a number of high-level descriptors of behaviours. This framework denotes a stimulus-response view on visitor behaviour, where people are described in terms of their reaction to stimuli that the exhibition provides, rather than as active participants in it. Brown and Chalmers (2003) describe a number of physical patterns of activity and visiting strategies put in place by tourists in urban spaces, and they suggest general recommendations for design that are abstracted from such patterns. Subsequently, in Brown *et al.* (2005), the authors discuss one design example which embodies some of these design recommendations: this was a rather technical exercise that allowed the authors to develop only one design theme. Although it is clearly connected to previous studies of visitors' activities, it is still rather abstract and not really connected with the specificity of the locale where it will be deployed and with embodied activities to occur there.



Visitors scanning a QR code during their interaction with *Reminisce* at Bunratty Folk Park / © Luigina Ciolfi

Similarly, Galani and Chalmers (2002) conducted ethnographic studies of visitors in museums in order to inform design of a co-visiting tool. They propose three categories of visitor strategies, and give general design suggestions on how these categories could be supported by technology. On this basis, a prototype was then developed and studied *in situ* (Brown *et al.* 2003). The prototype enabled mixed-reality visits to the Glasgow Lighthouse arts centre. Reeves *et al.* (2005) discuss *One Rock*, a collection of Augmented Reality exhibition installations, and present an analysis of typical cases of use around it. Similarly to the previous examples we have discussed, the authors draw design recommendations based on generalisations from ethnographic observations of visitors' behaviour. In particular, a typology of levels of engagement is proposed to aid the understanding of different forms of engagement



Listening to a memory on the mobile phone /© Luigina Ciolfi

and interaction with public installations. In these examples of work however, there is no attempt to develop a richer framework to include the physical qualities of the context into design principles for interactive exhibitions, thus excluding an important aspect of how visitors engage with heritage.

The most substantial body of work dedicated to the analysis of forms of interaction and co-participation in context around public exhibits has been produced over the past number of years by researchers at King's College London. Vom Lehn *et al.* (2001) present a detailed analysis of conduct in a number of museums and galleries. Heath *et al.* (2002) and Hindmarsh *et al.* (2005) have highlighted in more detail how the deployment of interactive exhibitions can engender novel forms of social interaction in exhibition spaces. This body of work has been pioneering in highlighting the

importance of social interaction in shaping visitors' experiences around exhibits, and in pointing out important design issues for the future deployment of museum interactives. The authors also recognise the importance of the physical setting of interaction: the material features of the exhibit also reflexively inform the production of conduct in connection with the ecology in which they lie. In this respect, they highlight the importance of analysing physical trajectories and bodily movements in conjunction with the analysis of conversations. They recognise that aspects of the material contexts in which the technology will be encountered haven't been adequately investigated.

However, whilst this body of work is rich in situating conduct within a context, the treatment of context itself is – again – limited: it is seen as a backdrop, rather than a crucial element of visitor experience.

We argue that designing for true participation in cultural heritage requires moving forward by articulating specific features of place and designing for them. Place is intended as a physical environment that is lived and experienced by people: the physical environment has structural qualities that are an essential component of the visitor experience together with the social opportunities that such an environment offers. Therefore in museums and heritage sites, where the physical display is at the core of the visitor experience, the focus should be on the compound of human activities and the physical environment. Only by understanding how visitor interactions are inextricably linked to and in turn shaping the physical context of the exhibition, can we design to augment these activities and to encourage greater engagement and participation. Place is a useful concept to utilise in this respect: we are always en-placed, the physical world matters to us as a lived thing, and when people interact and experience technology this is connected to the environment they



The *Reminisce* interactive desk in the school house at Bunratty Folk Parl / © Luigina Ciolfi

inhabit. In order to design effective technological interventions, we need to consider this richness of interaction with the physical and digital in context. Influenced from phenomenology and phenomenological geography, we utilise an articulation of place (Ciolfi 2003, Ciolfi, Bannon 2005) defining it as an emergent, embodied, multi-layered experience of the physical environment at personal, cultural, social and physical levels. Experience of place is invested by personal memories, emotions and identity; social, collaborative and interpersonal relationships; culturally-formed knowledge and understandings; and physical, sensory and perceptual processes. Each dimension is present at any moment of one's experience of a place, and the experience is shaped by the dynamic interconnections among these dimensions. Each particular experience of place is individual and unique, although it is influenced by the presence of and inter-

action with others, as expressed by the social dimension. In order to understand a place and its inhabitants, all four dimensions and their interplay with each other have to be taken into account. These dimensions do not exist *a priori*, as a series of abstract categories, but emerge and become visible in practice and experience, as they lead to and emerge through people's *actions and activities*. Through their actions people leave traces of their presence and actions in a space, whether tangible or not. These will 'shape' place as it will be experienced by themselves and others in the future.

Clearly, places of heritage are also experienced at these four levels. If we think of placemaking as active process, as the emergence and shaping of a relationship with the world alongside these dimensions, we can see why attention to place experience and placemaking can help shape appropriate technologies to support positive visitor experiences, and to facilitate the establishment of such a connection. Moreover, designing for placemaking includes a concern for social interaction and participation, which have been identified by previous research as crucial aspects of a positive museum visit: participation also can encourage people to share aspects of their place experience. Overall, attention to place and placemaking can lead the successful 'augmentation' of places of heritage through technology, so that any intervention extends and enhances the qualities of an exhibit or site, rather than taking away attention from them.

For all these reasons our work is particularly concerned with the situatedness of design interventions: we see design work as a way of maintaining rootedness to a place and embodying specific characterisations of interactions, and facilitating new ones.

Following such a place-centred approach led to design, development and deployment of installations that enabled people's meaningful connections at personal, cultural, social and physical

levels to the places of heritage they visited. *Re-Tracing the Past* allowed visitors to the Hunt Museum in Limerick to explore and comment with their impressions on mysterious museum objects through two fully-interactive spaces, the *Study Room* and the *Room of Opinion*, where physical components of the spaces allowed for interactive behaviour (Ciolfi, Bannon, 2007). In the *Shared Worlds* project, the *Shannon Portal* at Shannon Airport (Ciolfi *et al.* 2007) and the *Recipe Station* at Limerick's Milk Market (McLoughlin, 2008) enhanced historic public places by facilitating new forms of social interactions: the *Portal* allowed passengers to share digital mementoes of their journey in the form of annotated photographs; the *Recipe Station* encouraged patrons of the market to explore a variety of foodstuffs by providing them with a collection of recipes donated by stallholders and other customers.

Our most recent project, *Reminisce*, introduced an assembly of place-sensitive interactive artefacts into an open-air museum, Bunratty Folk Park (McLoughlin, Ciolfi 2011). Bunratty Folk Park exhibits an array of buildings, artefacts and landscapes from different periods in Ireland's history; it is a large site offering sparse information to its visitors, who often find it difficult to understand aspects of what they see (for example, the period or style of a particular building) or feel connected to the display (e.g. an empty building with no activities being performed). The narrative we developed for our design is that of 'virtual' characters from times past who have left auditory memories regarding their life and everyday activities at different sites of the Folk Park: visitors could collect them by scanning QR codes in particular locations using a mobile phone app, and could also record in real time their own impressions, comments and reactions to what they saw and heard. Participants could navigate through the *Reminisce* sites by collecting 'souvenirs' of small everyday objects (recipes, pieces of turf,

hanks of wool, etc.) at each house and using them as a subtle guide to finding more memories. The souvenirs also worked as a key to accessing further digital content: in one of the museum's buildings, the School House, by placing the souvenirs on an interactive school desk, visitors could listen to all the comments that other participants had contributed throughout the *Reminisce* trail (Ciolfi, McLoughlin 2011).

By subtly augmenting the museum through place-sensitive components that facilitated interaction but did not take away from the authenticity of the buildings on display, *Reminisce* supported different kinds of active participation and of social and collaborative interactions: visitors commented richly on the content that was provided to them and were able to relate more to the exhibits. They also were able to leave their unique traces and to contribute to other visitors' experiences. *Reminisce* provided additional valuable elements to visiting Bunratty Folk Park by augmenting the richness of the visitor experience at four levels of place experience: it affected the physical appearance of the museum's exhibits but in a subtle and complementary way; it encouraged the expression of personal memories, emotional reactions and other personal comments; it engendered new forms of social and group interaction and of sharing in the visit; finally it provided greater resonance to the culture of the museum as a 'living history' site and to the cultural significance in terms of Irish history and traditions in a way that every visitor could appreciate.

In conclusion, we believe that focusing on place experience and placemaking is an effective way to develop work on 'participatory heritage', whereby heritage professionals could also become more deeply involved in the frame of participation, rather than just supporting visitor-generated content. It is important to design for different 'voices' in heritage, and placemaking – through the rep-

resentation of values from different communities in heritage – can be an important concept to inform design for greater participation.

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