

# Gifting Personal Interpretations in Galleries

Lesley Fosh, Steve Benford, Stuart Reeves, Boriana Koleva

University of Nottingham

Nottingham, UK

[firstname.lastname]@nottingham.ac.uk

## ABSTRACT

The designers of mobile guides for museums and galleries face three major challenges: fostering rich interpretation, delivering deep personalization, and enabling a coherent social visit. We propose an approach to tackling all three simultaneously by inviting visitors to design an interpretation that is specifically tailored for a friend or loved one that they then experience together. We describe a trial of this approach at a contemporary art gallery, revealing how visitors designed personal and sometimes provocative experiences for people they knew well. We reveal how pairs of visitors negotiated these experiences together, showing how our approach could deliver intense experiences for both, but also required them to manage social risk. By interpreting our findings through the lens of ‘gift giving’ we shed new light on ongoing explorations of interpretation, personalization and social visiting within HCI.

## Author Keywords

Galleries; museums; visiting; mobile guides; collaboration; gifting; interpretation; personalization.

## ACM Classification Keywords

H5.m. Information Interfaces and Presentation (e.g., HCI)

## INTRODUCTION

Galleries and museums are constantly seeking new ways of engaging visitors with the precious artifacts that they curate and conserve. Interactive technologies, from long-established audio guides to more recent tabletop [13], location-based [23] and augmented reality [19, 30] displays, offer a compelling route to achieving this, potentially allowing visitors to access large repositories of information throughout their visit. However, the successful deployment of such technologies needs to accommodate three major challenges:

**Interpretation** – the idea of interpretation lies at the heart of curation. Whereas the traditional role of the gallery or museum was to provide an official interpretation, the

contemporary institution is typically more concerned with supporting visitors in engaging with multiple interpretations or in making their own interpretations [32]. Simon argues that visitors to museums should be active participants rather than passive consumers, and that participation involves visitors being able to “create, share, and connect with each other around content” [27]. Cioffi and McLoughlin also found that visitors’ engagement at an open-air living history museum was meaningful when connections were made between the museum content and their own lives [6].

**Personalization** – a consequence of delivering multiple interpretations is that visitors may be confronted with increasingly large volumes of information. The capability of digital technologies to provide access to huge volumes of online information only serves to compound this problem, threatening to distract attention away from the artifacts themselves or even overwhelm the visitor. At the same time, the vast and diverse range of people who visit museums makes it difficult to design content for an ‘average’ visitor. This has stimulated an interest in personalization, typically by automatically recognizing visitor types or visiting styles and filtering or adapting information accordingly [3]. However, attempts to categorize visitors into different types or styles are often overly simplified and aren’t of practical use to exhibition designers [25].

**Socialization** – it is commonplace to visit a gallery or museum as part of a group of family or friends which raises further challenges, from the problems of sharing audio guides [1] to the difficulties that arise from splitting attention between artifacts and information on the one hand and the needs of fellow visitors on the other, which in some circumstances can lead to a near constant state of interruption as visitors prematurely disengage from the former in order to keep up with the latter [31]. Studies of visitor behavior have shown that collaborative interaction shapes how visitors experience museums and their objects [11, 33] and it is becoming more common for visiting technologies to incorporate social functions such as allowing visitors to share expressive responses [15] and make connections with others around objects [7].

Addressing any one of these issues is difficult enough, but the successful museum visit needs to accommodate all three simultaneously, enabling visitors to make rich interpretations from potentially large pools of information while also paying due attention to fellow visitors. It is this combined challenge that we tackle in this paper by

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from [Permissions@acm.org](mailto:Permissions@acm.org)

CHI 2014, April 26 - May 01 2014, Toronto, ON, Canada

Copyright 2014 ACM 978-1-4503-2473-1/14/04...\$15.00.

<http://dx.doi.org/10.1145/2556288.2557259>

proposing an approach to interactive visiting experiences in which we get visitors to design interpretations for friends and loved ones that they then experience together. The result is a kind of personalized gift experience – a one-off visit to a gallery or museum that is crafted by one person to directly communicate an interpretation to another that they know particularly well. We anticipate that that this apparently simple idea might potentially address the issues of interpretation, personalization and socialization in an integrated way and could lead to intense and personally meaningful engagement with cultural artifacts.

In what follows, we present an exploration of how we worked with pairs of visitors to a contemporary art gallery to realize this user-generated approach to interpretation. To peek ahead at our results, our study suggests that the gifting of personal interpretations can lead to intensely powerful experiences for couples, but also introduces elements of social risk that need to be carefully managed. It also sheds new light on previous discussions of interpretation, personalization and social visiting – as well as on gift giving – within HCI and related fields.

#### **APPROACH**

We conducted an exploratory study to establish how our proposed approach would work in practice and to frame key issues for further technology development and study. We carried out a naturalistic field trial, studying users as they first designed an experience for a partner at an initial workshop and then tried it out with them under the realistic, ‘in the wild’ [8] conditions of a live gallery setting. We captured audio and video and conducted interviews so as to build a rich picture of visitors’ design rationales and how their designs subsequently unfolded and were received by their partners.

**Setting:** We based our work in Nottingham Contemporary, a modern civic contemporary art gallery. Contemporary art can be notoriously difficult to engage with and interpret, and so offered a challenging domain for exploring our approach. Following initial discussions with the gallery we focused on a major visiting exhibition curated by a high-profile artist. This set of around 200 objects included historical and contemporary artworks, videos, machinery and archaeological artifacts, presented with minimal information, typically just title, artist, date and materials.

**Participants:** Our study involved sixteen participants in total, divided into eight pairs. We initially advertised through the gallery’s social media and our University’s network to recruit volunteers who wished to visit this particular exhibition and would like to design an experience for a partner. Of the eight who responded: six (five female) chose to design for their boyfriend/girlfriend/spouse, while two (one female) decided to design for a friend. All eight were interested in contemporary art, and all identified their partners as either interested in contemporary art or willing to find out more.

**The experience:** To make it feasible to design a personalized interpretation for someone else from scratch within the constraints of a single workshop, we chose to base the designs on an existing template. For this, we chose the ‘sculpture garden trajectory’ previously proposed by Fosh *et al.* [9], a configurable structure for guiding pairs of visitors through a sequence of exhibits. To quickly recap this, at each sculpture, visitors are presented with a piece of music, a voice instruction telling them how to engage with the sculpture (how to look, move around and gesture), and a fragment of text to be delivered as they walk away from it afterwards. Fosh *et al.* describe how this trajectory has been designed to switch each visitor between having a personal experience, isolated from their partner while experiencing each sculpture, before reengaging with their partner between sculptures. We felt that this provided an appropriate and clear template for visitors to design a gallery experience for another person, with ample opportunities to personalize an interpretation through choice of music, instructions and text.

**Design workshops:** We ran six two-hour design workshops, each attended by one or two participants. Those that attended together were able to discuss ideas and selections, and for both individual and paired workshops we asked questions to elicit the participants’ initial motivations and design rationales. We collected audio-recordings of the workshops and participants’ written responses to a set of worksheets used to help structure their ideas. We first asked participants to identify some broad aims for their experience, thinking about the person they were designing for and what they would want to get out of the experience. We then asked participants to go into the gallery and choose five exhibits that they wanted to include in their experience. Next they were asked to identify styles of music that might fit each object’s themes. They were given the choice to listen to specific music tracks using the music streaming website Grooveshark.com to choose a piece of music to go with each exhibit. Next they were invited to consider what styles of interaction would be appropriate for their design, e.g. a physical action or a thought exercise, before deciding on what their partner should do while engaging with the object and a specific phrasing for the voice instruction. Finally, they were asked to consider what style of text their partner would receive for each object, e.g. factual information or a personal message, then find or write a portion of text by reviewing the exhibition catalogue, searching on the Internet or drafting a personal message. Participants kept track of their design choices on paper worksheets which we took away and used to develop their designs into individual smartphone applications.

**Visits:** We implemented the participants’ designs on Android smartphones using the AppFurnace tool [2], with the vocal instructions for actions being narrated by a voice artist. Given the constrained space of the gallery and reflecting the approach of many commercial audio guides, we asked visitors to find their own way between exhibits and manually confirm when they were ready to begin their

experience of each rather than relying on an automated location-system. Around two weeks after the initial workshops, we invited the participants and their partners to attend the gallery in their pairs. They were briefly introduced to how the system worked before being left to try the experience. We video-recorded from a distance to capture an overview of their interactions, using a directional microphone to capture their conversations. Once they had finished, we interviewed them in their pairs, which involved asking them both to reflect on each of the episodes in their visit. While we recognized that participants might be more critical of the experience if interviewed separately, we chose to interview them together so as to maintain the sense of a shared experience that they had carried out together, while also being able to capture any back-and-forth dialogue about their different experiences and their personal interpretations.

**Analysis:** Our approach gave us a rich set of data for each pair of participants, telling a story through the initial design workshop, the visit itself and the interview that followed. The audio and worksheets from the workshop were used to build a picture of the motivations and justifications for participants' personalized designs. Our approach to analyzing the video was to adopt an ethnographic style across a number of data sessions, reviewing each pair's interaction with each object in their visit. We summarized an overview of what happened in each interactional sequence, based on our analysis of participants' gaze, gestures, utterances and interactions with relation to the instructions they heard. While no two sequences were the same due to the different objects visited and the bespoke content delivered, we were able to draw out behaviors that were broadly successful, uniquely interesting or problematic. Our interview data was used in conjunction to explain what we saw, with participants elaborating on what they thought and did at each stage of the visit. In taking this approach, we were able to build a rich case study of each pairs' engagement with our experience from start to finish.

## FINDINGS

We present our findings in two parts. First, we provide a general overview of our participants, their motivations, the designs they created and how these were experienced in the gallery. We then drill down into four specific examples of designs and subsequent interactions that best illustrate the key themes to emerge from our study.

### Summary of participants, motivations and reactions

P1.a (female, 20s) wanted to design an enjoyable and educational experience for her boyfriend, P1.b (male, 20s). During the visit they both visibly engaged with the experience with P1.a demonstrating to P1.b what to do.

P2.a (female, 20s) wanted to design a fun experience for her boyfriend, P2.b (male, 20s), that might teach him something new. Both felt uncomfortable during the visit; P2.b at using the experience and P2.a at watching P2.b's reaction.

P3.a (male, 20s) wanted to show his friend, P3.b (male, 20s), a different take on art. Both engaged enthusiastically during the visit, with P3.a often showing P3.b what to do.

P4.a (female, 20s) designed a personal "emotional journey" for her boyfriend, P4.b (male, 20s). During the visit, P4.a stood back and let P4.b do the experience mostly alone.

P5.a (female, 30s) designed a personal experience for her husband, P5.b (male, 30s), that would communicate her views on art. P5.b used the experience alone and had trouble finding some objects and interpreting the instructions.

P6.a (male, 20s) wanted to design an amusing and inspiring experience for his girlfriend, P6.b (female, 20s). During the visit they both enthusiastically engaged with the art works.

P7.a (female, 30s) designed an educational but light-hearted experience for her husband, P7.b (male, 30s). During the visit the participants were mostly engaged in the experience but did not interact physically with the art.

P8.a (female, 60s) wanted to design a challenging experience that might take her friend, P8.b (male, 60s), out of his comfort zone. They did not return to use the experience as P8.b was unable to attend the gallery.

### An overview of the designs

We now consider the four key steps in designing an experience: choosing exhibits, choosing music, designing actions, and writing the 'take away' text for each, and how the workshops were facilitated to ensure participants produced complete and satisfactory designs.

**Choosing exhibits.** Between them, our participants chose 30 unique exhibits for their designs. Six exhibits featured in two separate designs while one recurred in three. They tended to choose objects to fit the *type* of experience they wanted to design. The two participants who aimed to design a primarily personal experience (P4.a and P5.a) chose objects that could represent the personal messages they wanted to get across, while the six who wanted their experiences to be primarily educational chose objects that they could craft an interesting message around. Perhaps because the exhibition was so varied, all but one participant was able to easily choose five exhibits they felt would work in the experience, the other only finding four within the time given. Choices often related to a specific aspect of their partner's life, for example one chose *Map of the World and Double Dome* because "it appeals to [my partner]'s interest in globalization, maps and travelling". However, participants also chose exhibits that *they* liked and wanted to share with their partner, for example P2.a chose *Kaleidoscope Cat V* by Louis Wain, an artist she had been interested in since before coming to the exhibition, so used the experience to share an interesting story relating to it.

**Choosing music.** Music was often directly inspired by the exhibit, for example one participant chose *Time* by Pink Floyd as she felt the exhibit was representative of the world existing through time, and that the ticking clock featured in

the song supported this interpretation. At other times the music choices were based on physical characteristics of the exhibit, for example the track *Crystalline* by Bjork for the object *Nunhead*, a car engine covered in blue crystals. This said, in almost all of the cases, participants chose pieces of music that they knew their partner liked and some chose pieces that had a particular meaning for them as a couple, for example P4.a chose *Saturate* by Beastie Boys which was a song she and her partner used to listen to in nightclubs, while P6.a chose a piece of music from the soundtrack to a film, *Ghost in the Shell*, that he and his partner liked.

**Designing actions.** The actions to be carried out at exhibits ranged from the physical to the cerebral. Physical actions might be designed to establish particular moods, for example contemplatively sitting in front of an exhibit. Other times they were designed to be playfully provocative, demanding unusual and potentially embarrassing actions such as dancing in public view. One way of upping the stakes was to imbue such actions with personal shared meaning. For example, this instruction to dance in front of an exhibit - *“Stand as close as you can to the image. Step back and delicately step side to side. Do the coma cat dance move.”* - directly invoked this couple’s special shared dance move. The more cerebral activities invited thought and reflection without overt physical action. Some of these directly encouraged the partner to consider the exhibit from the same interpretational stance as the designer. For example, one participant thought the piece *Eyes in Space* was about the beginning of time and used the instruction to directly ask, *“Think about the very beginning of the world, infinite space and the potential within it.”*

**Writing the text.** The textual information to be displayed on leaving the exhibit often included factual information such as a short biography of the artist or a fact about how an artifact was made. This might be drawn from the official catalogue or from the designer’s own personal knowledge. Of particular interest was the use of this ‘take away’ text to offer justifications of the designers’ choices, or to directly explain the designer’s interpretation of the object, for example, *“These two pieces of art span decades and both are examples of humans trying to come to terms with their place on earth. I chose them and the music to encourage a feeling of transience on earth, but also to connect it to the past, present and future.”* In some cases this extended to an apology for an especially demanding action, for example the text following an instruction to shout ‘Hello!’ at a sculpture of a telephone read: *“Sorry, that must have been really embarrassing!”* On other occasions participants chose to give more concrete snippets of information that they anticipated their partner would be interested in, such as, *“This is the first drum machine ever made. A knob selects one of 10 preset combinations of sound to create patterns such as Tango, Fox Trot, Waltz, and so on.”*

Participants were able to successfully choose music, instructions and text that they felt was appropriate, and often

used our prompts and worksheets to guide their design choices. One participant chose to deviate from the experience template, leaving out instructions where she thought the music, object and text were sufficient for her partner’s experience.

### **An overview of the gallery visits**

We now summarize what happened when these experiences were actually deployed in the gallery. Of the eight participants who designed an experience, seven brought their partner back to the gallery to use it; the other participant’s partner did not live locally and was unable to attend after all. Six of the seven pairs chose to try the experience together, while one pair, P5.a and P5.b, decided the recipient would use it alone as touring the gallery together would have been alien to their usual visiting pattern.

In the large majority of cases participants followed and complied with the designed experiences. All of the participants saw the experience through to the end and in all but one case they listened to the entire music tracks before disengaging from the objects. We saw just one example from 34 exhibits of a participant, P2.b, moving both headphones from his ears part way through the audio and on a handful of occasions participants would briefly remove one headphone to speak to each other during the audio. We were able to see from our video observations that out of the 23 instructions requesting an overt physical interaction, in 18 cases the recipient followed the instruction, while in the other five they engaged by simply standing and looking. For the instructions that required non-physical activities such as contemplating, participants typically stood and looked at the objects for the duration of the audio, with little interaction between the pairs. Of the 32 exhibits for which the experiences included a portion of text information delivered after the audio, only one participant, P4.a, did not read the text that was displayed. Often there was discussion between the designer and recipient before they walked away from an exhibit, for example the designer expanding on the information or the recipient reflecting on the experience.

In terms of how they felt about using the experiences, six out of the seven pairs reported having a positive experience, finding that it was enjoyable, engaging and stimulated discussion, though could sometimes be challenging. One couple did not enjoy the experience, as the recipient, P2.b, felt it was too prescriptive and did not give him freedom to visit as he wanted, and especially did not appreciate being given instructions for how to act. P2.a, the designer, in turn felt awkward doing the experience alongside P2.b, who did not hide the fact that he wasn’t enjoying her design.

Having given an overview of the designs and experiences, we now turn to four illustrative fragments of interaction to explore more deeply. These are chosen from four different pairs of participants interacting at four different exhibits. Examples 1 and 2 focus on what might be called broadly successful and typical interactions where the experience

generally proceeded as planned. Example 3 presents a case where the experience broke down, while Example 4 reflects on the experience of the one participant who completed it alone.

### Example 1: Interpreting an artwork

We join P1.a and her boyfriend P1.b at the first object they encounter, *Man Coming Out of a Woman*, a sculpture of a woman giving birth to a man's leg, complete with shoe and sock.

**Design.** During the workshop, P1.a reported choosing this object because it was lifelike, abstract and “quite eerie”. P1.a wanted P1.b's experience to be “dramatic”, and chose a piece of classical music to achieve this effect: *Romeo and Juliet* by Tchaikovsky. P1.a wanted P1.b to interact with the object “thoughtfully” and “physically”. She chose the instruction, “*Stand there with your legs wide apart. What does it feel like?*” to stimulate P1.b to imagine how it might feel to give birth to a leg. For the text, P1.a thought that P1.b would want to learn about what it meant to the artist to produce the object and so included information about the artist and how his artworks are generally interpreted.

**During the visit.** P1.a initially leads P1.b towards the object and they stand together, glancing at each other to confirm they are in the right place before turning to focus their attention on the object itself. As the experience starts, P1.a looks at P1.b while laughing nervously as she waits to see how this first interaction will unfold. They both look at the object while listening to the music. Upon hearing the instruction, P1.a moves her legs outwards, demonstrating to P1.b what to do and P1.b follows with the same action. After around 30 seconds, P1.a moves her legs wider to exaggerate the action, and looks at P1.b and smiles, further demonstrating the gesture while also checking that P1.b is following. When the music ends, they move back to a normal standing position, take off their headphones and read the information. P1.a finishes reading first but sees that P1.b is still reading. She touches him on the arm while turning to walk away. P1.b follows while continuing to read the text.

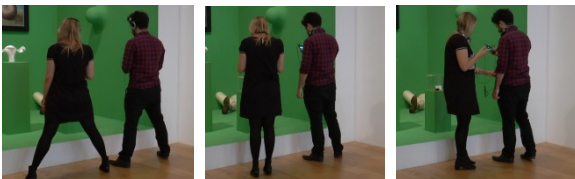


Figure 1: P1.a (left) and P1.b at *Man Coming Out of Woman*

**After the visit.** When interviewed, both participants said they enjoyed their experience, finding the action of standing with their legs apart particularly effective in prompting their imaginations, as P1.a had intended. However, their opinions diverged over the choice of music and revealed somewhat different interpretations of the work. After saying that he didn't see how the music fitted with the object, P1.b suggested that, “You could play a cheeky piece of music there because it's quite a cheeky piece of art”, to which P1.a

replied, “But I didn't think it was cheeky so that's why I chose [*Romeo and Juliet*]”.

### Example 2: A very personal interpretation

In this example we follow P4.a and her boyfriend P4.b at the fourth exhibit in his personal “emotional journey”.

**Design.** We see the participants here at *Singing Gargoyle*, a medieval stone gargoyle dating from c.1200. P4.a designed the experience around this object to be the low point of P4.b's emotional journey. P4.a interpreted the object as being representative of P4.b's fear, death, and the fact that “everybody dies, now and in the future”. P4.a wanted to find a “slow, sad” song which would reinforce the theme of death. She chose *Videotape* by Radiohead, a band that both she and P4.b are fans of. She then designed an instruction that directly asked P4.b to “*Think about the eternal cycle of life and death*”, and used the text to deliver a very personal message explaining and justifying her design: “*I chose this emotional song and topic to confront you with your fear – death – and try to make you feel comforted through history*”, before adding, “*Don't hate me!*” – acknowledging the potential discomfort that he may experience.

**During the visit.** As they reach the object, P4.b steps forward to stand in front of the object, while P4.a stands a few feet away, giving P4.b space to do the experience alone while orientating herself so that she can see both the object and P4.b. They stay in this position for the duration of the audio with very little movement, seemingly immersed in their own experiences. As the audio finishes, P4.b orientates slightly towards P4.a while he reads the text. P4.a continues to watch P4.b. She laughs nervously while trying to gauge his reaction (instructing P4.b to confront a delicate fear is a somewhat risky strategy that might potentially backfire). P4.b notices and smiles back. P4.a then touches him on the waist, says “Sorry”, and continues to laugh. P4.b says, “It's ok”, smiles and walks away towards the next object.

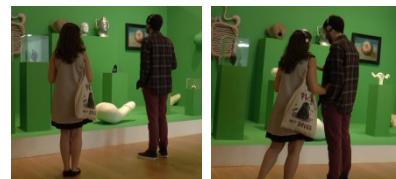


Figure 2: P4.a (left) and P4.b at *Singing Gargoyle*

**After the visit.** When interviewed, P4.b said that he thought the experience was effective, making him think about the passing of time “in terms of the age of the object”, but that it “didn't quite get me in touch with a fear of death feeling”. The effect of watching him, however, was more profound for P4.a. She said she found listening to the song in situ to be “much more powerful” than when she designed it. Furthermore, she found watching P4.b carry out the experience to be very moving, saying, “At one point you were like staring at the art and you just looked so, like, downturned mouth and I was just like, oh my God, what am I doing to this poor guy?” This suggests that P4.a's initial interpretation was built upon through carrying out the



experience with P4.b, allowing her to reflect on her interpretation, the content she chose, and the effect of giving the experience to her partner.

### Example 3: Failing to engage with the experience

In this example, we turn to the one experience that was observably problematic. P2.a wanted P2.b “to see himself through my eyes”, but by the fourth exhibit P2.b has now ceased to visibly follow any instructions.

**Design.** The exhibit here is *Aqua-planing*, a piece of wall art featuring a grid of cardboard roads and small cars. P2.a chose this object because it reminded her of their plans to take a road trip around the USA, and chose a piece of music that drew upon the themes of “driving, escaping and holidays”: *Aging Faces – Losing Places* by Kevin Draw. She then chose the activity, “Trace the journey of your favorite car with your finger. Where is it going?” P2.b used the text to explain what the piece of art meant to her: “Cars have been on my mind recently – road trips, lessons, your new job. That’s why I like this piece - that, and the precision that has gone into making it.”

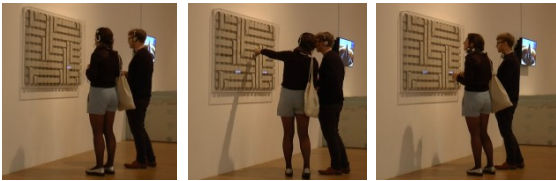


Figure 3: P2.a (left) and P2.b at *Aqua-planing*

**During the visit.** Prior to this episode the pair had visited three other objects with varying degrees of success. Here, they stand and look at the object until they hear the audio instruction, at which point P2.a looks at P2.b expectantly. P2.b turns his head briefly towards her but does not meet her eyes. He turns back to face the object while P2.a watches him. They both stare at the object for a short while, with P2.b expressionless, before P2.a initiates some interaction by pointing at it. Instead of following a car with her finger, however, she leans towards P2.b to engage him in conversation, perhaps avoiding what could have been an awkward couple of minutes stood in front of the object. They each take off one headphone and engage in a discussion about the artwork. After the music finishes and they have read the text information, the participants stay at the artwork for one and a half minutes before disengaging.

**After the visit.** During the interview it emerged that P2.b hadn’t enjoyed the experience overall, mainly because he would rather “have the choice and freedom to look at what I wanted”, and in particular didn’t like the instructions. He found the instruction at *Aqua-planing* particularly challenging, saying, “I was baffled by it really. None of the roads went anywhere, they just went in straight lines, so I thought it was a bit ambiguous to trace where my favorite car was going”. Further to this, P2.b had a different take on the theme of driving: “I guess I spend a lot of time in traffic now so I guess that was kind of different imagery for me”. P2.a only realized that these connotations might arise when

carrying out the experience with P2.b, saying, “When I was stood next to him I was like, oh actually this is going to probably remind him of being in traffic, which I didn’t realize by myself.”

Another issue that both P2.a and P2.b raised was using the experience together. P2.a said, “I think I’d have preferred to send him by himself... I just felt a bit like a spare wheel”. P2.b agreed, saying “I felt under pressure to sort of show a reaction to what I’d seen”. This suggests awkwardness for both parties – the designer witnessing the experience unfold (somewhat unsuccessfully) and the recipient feeling obligated to observably engage with the experience (e.g. through following instructions).

### Example 4: A solo experience

We end with a brief discussion of one final example, that of P5.b, the only participant to try the experience on their own without their partner present. A number of problems arose due to the designer not being present. First, the recipient had trouble locating the first two exhibits, which had a detrimental effect on his overall experience, although after this initial confusion he was able to settle in and feel more comfortable with the subsequent exhibits. Second, it was unclear for the recipient what was expected of him, especially when hearing instructions, and consequently he did not perform any of the physical activities. Moreover, the designer was not there to support the experience in ways we have seen already: making clear what was expected of the recipient, monitoring how the experience unfolded, leading or demonstrating where necessary, showing solidarity or even implicitly demanding compliance in a way that appears to have been successful in many cases (as illustrated in our first two examples yet was problematic in our third). Thus, while this participant was able to complete the overall experience, reported enjoyment and felt, once he had got used to the experience, that his partner’s personalization came through strongly, he appears to have had a quite different experience overall.

## DISCUSSION

Our findings reveal that visitors are generally able to create personalized experiences for people they know and then to successfully complete them together. Fosh *et al.*’s existing sculpture garden trajectory provides a suitable template for achieving this, with visitors being able to quickly knit together exhibits, music, actions and text into coherent experiences. Visitors created a wide range of interpretations, from the broadly didactic where they explained the general nature and possible meanings of the artworks, to the highly personal where the artworks were imbued with deeply personal messages. Experiences were very often completed and there was a high degree of compliance with instructions at particular exhibits. This mirrors Fosh *et al.*’s previous findings of how visitors followed a single trajectory that had been created by an artist. Finally, the overall experience of designing and undertaking these unusual visits appears to

have been enjoyable and rewarding – if sometimes challenging.

What stands out, however, is the distinctive nature of the designs that emerged, often challenging, provocative and highly personal. Our observations show that the resulting experiences were often peculiarly intense. Although they were generally well received, we observed how frequent laughter, glancing, reassuring smiles, touching and even kissing were required to maintain the social relationship between pairs and reassure anxious designers. The reasons for such anxiety are clearly illustrated by the one example where the experience was badly received, resulting in an uncomfortable experience for both parties. In short, it appears that while our approach encourages people to design unusual and personalized interpretations, this is also something of a high-risk strategy that demands careful management, frequent reassurance, and that can potentially backfire. In order to shed light on how our approach relates to the wider challenges of socialization, interpretation and personalization, we view our findings through a particular analytic lens – that of ‘gift giving’.

#### **The nature of gift giving – a brief review**

These experiences we have described are ‘gifts’, made by one person expressly for another, and then experienced together. The sociological literature tells us that gift giving is an important and complex social activity involving a *gift giver*, a *gift recipient* and possibly others too. Especially important aspects of gift giving are that: gift exchanges are social occasions; gifting involves social obligation and reciprocity; and gift assessment can be a tricky social moment involving saving face.

Mauss argues that gifts are about human solidarity and that gift giving practices are motivated by reciprocity and obligation [16]. Sherry’s model of gifting proposes that the gift giver is primarily concerned with response induction [26]. The recipient responds in two concurrent ways, decoding the “instrumental and affective content of the gift” and also responding to the giver, “inferring intent and conferring judgment”. The giver then evaluates this dual response, and each partner experiences an affective outcome ranging from satisfaction to disappointment. Robles also considers the troublesome matter of how the ‘assessment’ of gifts needs to be smoothly managed between gift giver and recipient so as to ensure a smooth social occasion, noting that “occasions for gift exchange are organized and orderly, yet fraught with assumptions and face demands” [20].

Previous HCI research has drawn on this literature to help explain various social practices surrounding digital technologies. In a widely cited study, Taylor and Harper discuss teenagers’ text messaging as ritualistic gift giving with messages carrying symbolic meaning that is “expressly manifest for the recipient”, being exchanged in an “occasioned ceremony”, and compelling recipients to accept and reciprocate [29]. Salovaara notes various problems that arose in gifting MMS-based comic strips, including

recipients feeling uncomfortable with unannounced gifts arriving in their inboxes and feeling socially obliged to reply [22]. In discussing gift giving as one strategy to create relatedness among couples living apart, Hassenzahl *et al.* note that the gift giver may draw on intimate knowledge of the other person, that an appropriate gift signals intimacy, that the effort of gift giving can signal the importance of a relationship, and that gift giving often features a moment of surprise, when the actual gift is revealed [12]. Skågeby has turned to gift giving as a framework to describe social behavior in online networks, observing that “gifts are often as much about the giver as recipient” and arguing that gift-giving combines elements of both other-orientation and self-orientation [28]. Finally, Frohlich and Murphy have described how a technology probe comprising a box of physical objects associated with prerecorded audio stories generated excitement about the potential to create personalized gifts for others from shared memorabilia [10].

#### **Our gallery experiences seen as gifts**

The experiences reported in this paper bear many of the hallmarks of gift giving. They are made by a gifter for a chosen recipient. They are tailored to this recipient through the choice of exhibits they will find interesting or personally meaningful, music that they may know and like and personally significant actions such as a special dance move. The gifter may even attach a personal message or explanation mirroring the attachment of gift labels to material gifts. And yet, they also bear the imprint of their maker, carrying their own interpretation. The exchange of these gifts is strongly socially occasioned, even ceremonial, through an extended and structured gallery visit during which they are ‘unwrapped’ and experienced in the presence of the giver. This provides many opportunities for ‘assessment’ and also raises complex issues of ‘face’ as evidenced by the apparent nervousness of gift givers and the need for frequent reassurance (touching, kissing and spoken). There appears to be a strong obligation on the recipient to see the experience through to the end (even the couple in Example 3 completed their experience). While our study offered no opportunity for direct reciprocity (we did not invite recipients to make a similar gift in return) the giving of the recipient’s time and their compliance with public action might be seen as a form of reciprocation.

While evidently gifts, our experiences differ from the kinds of gifts that have been previously studied in HCI. Whereas previous studies have primarily focused on the exchange of digital media [22, 29] or material gifts [12] by remote partners, our study focuses on the design of an extended ‘gift experience’, a transient ‘in the moment’ experience rather than a persistent artifact, something that, despite the shift towards user experience, has not been widely considered in HCI. A second distinctive feature is the way in which these gifts are jointly experienced, with the giver also experiencing the gift while closely observing the recipient. This lends them a powerful and distinctive

dynamic that fundamentally shapes personalization, interpretation and socialization as we now discuss.

### **How gift giving shapes personalization**

There is an extensive body of work on personalization within museums and galleries, much of it concerned with the idea of adapting the selection or presentation of information to a visitor's interests or learning style. Much of this is driven by a desire for automated adaptation, with the system doing the work, possibly without being overtly visible to the visitor. Framing the visit as a personalized gift, however, suggests a quite different approach, considering personalization as a social matter that may be achieved between a giver and receiver. In the field of conversation analysis, 'recipient design' refers to the way in which a speaker's talk is personally crafted towards the recipient [21]. This type of person-to-person design extends to written communication in the case of *Postcrossing*, an online system for sending physical postcards to random recipients. Kelly and Gooch report that the personalization of postcards to the recipient's tastes and interests through the postcard's design and personal, handwritten messages are rewarding for both the sender and recipient [14]. In museums and galleries, however, this type of personalization to an intended recipient has only been considered in passing, such as in the case of Bartindale *et al.*'s study of a participatory museum installation where they saw visitors writing personal messages to co-visitors and contributing them to the installation that is then visible to the public [4]. These studies suggest that personalization is an implicit feature of social interaction and that considering the recipient when designing communications is perhaps a matter of course.

While we did see examples of personalizing to general interests (e.g. P1.a choosing the exhibit *Eyes in Space* because of her partner's interest in Sci-Fi), we also saw examples of a 'deep' personalization that involved making specific connections to particular events and issues (e.g. P2.a's planned roadtrip). Moreover, these experiences were actually personalized to two people with designers drawing on their own interests and knowledge or making privately shared references (e.g. P4.a and P4.b's special shared dance move). Of course, this approach is far from automated, requiring extensive effort by a human designer. This, however, may be of benefit as it is this effort that gives value to the gift and helps ensure that the experience will be taken seriously. Moreover, creating the gift and seeing it experienced by a partner may in itself be an enjoyable experience for the gift giver.

We therefore suggest that a focus on gift giving has the potential to deliver experiences that are simultaneously deeply personalized to two (or possibly more) people at a time, enhancing the experience of both albeit in different ways. Rather than seeing this as an alternative to automated personalization, it is interesting to consider whether the two approaches might be integrated. The gift giving approach requires a structure (in our case the default trajectory)

around which to work and possibly also help with inspiration for ideas, a gap that could be filled by recommender systems. In turn, personalization algorithms may be able to learn from the examples of deep personalizations that humans make when gifting.

### **How gift giving shapes interpretation**

Over many years, the role of galleries and museums has expanded beyond the collection and preservation of cultural artifacts to also encompass their interpretation. The nature of this interpretation has also evolved from traditional pedagogic presentations of received knowledge, to enabling visitors to contrast multiple, even contested, interpretations, and ultimately make their own [32]. HCI has also become interested in interpretation: McCarthy and Wright have argued for the importance of 'sense making' in relation to emotional and aesthetic user experiences [17]. Sengers and Gaver argue that the ambiguity of artworks leaves them open to multiple interpretations; and discuss how HCI might evaluate interactive artworks [24].

Our study suggests that the dynamic of gift giving scaffolds visitors in making interpretations. First, the approach is inherently dialogic, fostering a dialogue between the giver and recipient as to the meaning of the exhibits [18]. The giver is explicitly invited to make an interpretation as if they were a curator. The recipient then experiences an interpretation that has clearly been made for them. Moreover, it has been made by a 'peer' and so is perhaps more inherently open to challenge. Second, this staged process provides multiple opportunities for reflection, discussion and reassessment of interpretations. The partners can discuss each exhibit as they walk away and may also have opportunities for further discussion later on, perhaps in the café afterwards or in the weeks ahead. The giver also re-experiences their own interpretation, both directly and through the eyes of their partner. Interestingly, it is perhaps the giver more than the recipient who benefits most from this overall process as they are involved at all stages. We have previously noted how gifts are for the giver as well as the recipient and this would appear to be especially true in this case. Indeed, one could argue that the whole experience is really about enhancing visitors' gallery visits through making and sharing (rather than receiving) gift experiences.

Our study reveals how this structure led to complex and varied interpretations. Some were relatively traditional didactic interpretations giving information about the artist or the artwork (P1.a, P3.a, P6.a and P7.a), but then enhanced with personal relevance and significance. Others, however, were far more personal, with the artworks providing an inspiration for visitors to reflect on their own lives and relationships (P2.a, P4.a and P5.a). We suggest that this latter kind of interpretation – getting visitors to derive deeply personal meanings for artworks – is especially challenging for museums and that gifting interpretations is a potentially powerful mechanism for achieving this.



As a further note, the final study interviews were also a powerful mechanism for getting pairs to discuss and compare their different interpretations and so it would be interesting to explore how we might somehow incorporate such a mechanism into the gift experience, for example by ensuring that couples sit down and relax together afterwards, or perhaps by engaging them in collaboratively constructing a souvenir of their visit.

### **How gift giving shapes socialization**

We noted earlier how gift giving is ‘socially occasioned’ and so it should be no great surprise that it appears to shape the social aspects of visiting. While Laaksolahti et al.’s system also allowed users to share gestural responses to art, the responses produced were not personalized or gifted to a particular recipient [15]. It is the gifting of experiences that are crafted specifically for the recipient that makes our approach, and the interactions it produced, unique. Experiencing the gift together creates a strong mutual obligation between pairs. The recipient is obliged to complete the experience and comply with instructions as we saw in all experiences (even the unsuccessful one involved completion and partial compliance). For their part, the giver has a vested interest in ensuring that the recipient is able to complete the experience, at least by not interrupting them, but also by actively supporting them, joining in with the actions and often leading the way (see Example 1).

We do offer two caveats however. First, our participants had been recruited to take part and be observed in a study which may have led them to comply. This said, the intensity of interactions between couples, manifest through visible signs of nervousness and reassurance, suggests that there was a lot more at stake and reveals a real sense of mutual risk arising from the social obligation of a gift and thus the need to maintain face. Second, we acknowledge that we chose a relatively easy case – adult visitors who were interested in art visiting an art gallery – and that we might expect to see more interruptions and less compliance in crowded settings or with larger, rowdier and intergenerational parties. Again, we point to the peculiarly intense nature of the exchanges observed as evidence of an unusual and powerful social dynamic, but acknowledge that this needs testing with a wider range of groups in other settings in future studies.

Our study also uncovered a less expected social dynamic where some visitors appeared to take the opportunity to raise difficult or controversial issues with their partners, for example confronting them with their fear as we saw in Example 2. While Hassenzahl’s earlier studies of gift giving between remote couples revealed the role of gifts in creating ‘relatedness’ [12], it appears that something subtly different may be taking place here with partners taking the opportunity to surface challenging issues. Perhaps gifting interpretations of artworks might provide opportunities to raise personal or relationship issues that are difficult to confront in everyday life? Of course, our findings also suggest there can be an element of social discomfort

involved in negotiating such personal territory, however it is not unusual for experiences with contemporary art to be challenging, which is reflected in Benford *et al.*’s discussion of the use of discomfort to frame enlightening engagements with difficult themes in cultural experiences [5].

### **CONCLUSIONS AND DESIGN IMPLICATIONS**

Our formative study offers preliminary evidence that the approach of gifting personalized interpretations can lead to rich and intense shared visits. By working with a predefined template, visitors were able to design interpretations that were at once personal, informative and social. We therefore conclude that our approach has the potential to address some key challenges faced by galleries and museums today, namely the need for rich interpretation, deep personalization, and social coherence.

This said, it is important to consider what kinds of visitors might most benefit from this approach rather than assuming that it is a panacea for all visits, or indeed trying to design for an assumed ‘average’ visitor. Clearly, our approach requires visitors who are willing to undertake at least two repeat visits, who will invest considerable effort into making a gift for a close friend or partner, and who are willing to engage in acts of personal interpretation. Our interviews with participants and subsequent discussions with curators revealed that there are indeed some visitors who are passionate about art or history, and also that galleries attract many repeat visitors. We anticipate that our approach may be particularly appropriate to such passionate, committed and knowledgeable visitors, and that by framing our experiences as gifts, especially ones through which they can demonstrate their passion and knowledge, these visitors will be willing to invest considerable time in the process.

Our study revealed that enabling visitors to gift such personal interpretations to one another also entailed some social risk, and further thought needs to be given to how this can be accommodated in the process. Again, this suggests suitability to certain kinds of people who enjoy challenging one another and debating interpretations. However, it is also interesting to consider strategies to mitigate discomfort should the experience become problematic, for example allowing the designer to choose which part of the experience to trigger next as it unfolds, potentially cutting out some elements altogether.

Finally, future research should also explore how the approach might be scaled to a wider visiting audience. Could our initial design workshops be replaced with an online service to allow visitors to create experiences and download them to the smartphones prior to a visit? Also, could the experiences designed by passionate and committed visitors be collected and made more widely available for re-use by future visitors? Could these serve as templates for others or might it be interesting to experience someone else’s gift, and, of course, would their owners be willing to share them?

## ACKNOWLEDGMENTS

Lesley Fosh is supported by the Horizon Doctoral Training Centre at the University of Nottingham (RCUK Grant No. EP/G037574/1). This work was also supported by the CHES project (<http://chesexperience.eu>), which is co-funded by the European Commission (Grant No. 270198), and also by EPSRC Dream Fellowship award EP/J005215/1 and Platform Grant award EP/FO3038X/1. We also thank Nottingham Contemporary for their support.

## REFERENCES

1. Aoki, P., Grinter, R., Hurs, A., Szymanski, M., Thornton, J., Woodruff, A. Sotto voce: exploring the interplay of conversation and mobile audio spaces, *CHI'02*, ACM (2002) 431-438.
2. Appfurnace website, <http://appfurnace.com>, 2013.
3. Ardissono, L., Kuflik, T., Petrelli, D. Personalization in cultural heritage: the road travelled and the one ahead. *User Modeling and User-Adapted Interaction* 22, 1-2 (2012), 73-99.
4. Bartindale, T., Clarke, R., Shearer, J., Balaam, M., Wright, P., Olivier, P. Bridging the gap: implementing interaction through multi-user design. *CHI'11 Extended Abstracts*, ACM (2011), 2071-2076.
5. Benford S., Greenhalgh, C., Giannachi, C., Walker, B., Marshall, J., Rodden, T. Uncomfortable interactions, *CHI'12*, ACM (2012), 2005-2014.
6. Ciolfi, L., McLoughlin, M. Designing for meaningful visitor engagement at a living history museum. *NORDICHI '12*, ACM (2012), 69-78.
7. Cosley, D., Lewensterin, J., Herman, A., Holloway, J., Baxter, J., Nomura, S., Boehner, K., Gay, G. ArtLinks: fostering social awareness and reflection in museums. *CHI '08*, ACM (2008). 403-412.
8. Crabtree, A., Chamberlain, A., Grinter, R., Jones, M., Rodden, T., Rogers, Y. Introduction to the Special Issue of "The Turn to The Wild". *ACM TOCHI* 20, 3 (2013), 4 pages.
9. Fosh, L., Benford, S., Reeves, S., Koleva, B., Brundell, P. See Me, Feel Me, Touch Me, Hear Me: Trajectories And Interpretation In A Sculpture Garden. *CHI'13*, ACM (2013), 149-158.
10. Frohlich, D., Murphy, R. The Memory Box, *Personal Technologies* 4, 4 (2000), 238-240.
11. Grinter, R. E., Aoki, P. M., Szymanski, M. H., Thornton, J. D., Woodruff, A., Hurst, A. Revisiting the visit: understanding how technology can shape the museum visit. *CSCW '02*, ACM (2002). 146-155.
12. Hassenzahl, Marc, Heidecker, S., Eckoldt, K., Diefenbach, S., Hillmann, U. All You Need is Love: Current Strategies of Mediating Intimate Relationships through Technology, *ACM TOCHI* 19, 4 (2012), 30.
13. Horn, M., Atrash Leong, Z., Block, F., Diamond, J., Evans, E. M., Phillips, B., Shen, C. Of BATs and APES: an interactive tabletop game for natural history museums. *CHI'12*, ACM (2012) 2059-2068.
14. Kelly, R., Gooch, D. Understanding participation and opportunities for design from an online postcard sending community. *DIS'12*, ACM (2012), 568-571.
15. Laakolahti, J., Tholander, J., Lunden, M., Solsona Balenguer, J., Karlsson, A., Jaensson, T. The LEGA: a device for leaving and finding tactile traces. *TEEI '11*, ACM (2011). 193-196.
16. Mauss, M. *The gift: the form and reason for exchange in archaic societies*. London: Routledge Classics, 1990.
17. McCarthy J., Wright, P. *Technology as Experience*. MIT Press, 2007.
18. McKay, S. W., Monteverde, S. R. Dialogic looking: Beyond the mediated experience. *Art Education* 56, 1 (2003), 40-45.
19. Miyashita, T., Meier, P., Tachikawa, T., Orlic, S., Eble, T., Scholz, V., Gapel, A., Gerl, O., Arnaudov, S., Lieberknecht, S. An Augmented Reality museum guide. *ISMAR '08*, IEEE Comp. Soc. (2008), 103-106.
20. Robles, J. S. Troubles with assessments in gifting occasions, *Discourse Studies* 14, 6 (2012), 753-777.
21. Sacks, H. *Lectures on Conversation*. Blackwell, 1992.
22. Salovaara, A. Struggling with gift-giving obligations: when mobile messages are too laborious to reciprocate. *People and Computers: Cult., Creativity, Interaction*. British Comp. Soc. (2008), 83-86.
23. Satoh, I. Experience of context-aware services in public spaces. *ICPS'08*, ACM (2008), 81-90.
24. Sengers, P., Gaver, B. Staying open to interpretation: engaging multiple meanings in design and evaluation. *DIS'06*, ACM (2006), 99-108.
25. Serrell, B. Paying attention: The duration and allocation of visitors' time in museum exhibitions. *Curator: The museum journal*, 40 (2), (1997) 108-113.
26. Sherry Jr, J. F. Gift giving in anthropological perspective. *Journal of Consumer Research* 10, 2 (1983), 157-68.
27. Simon, N. *The Participatory Museum*. Museums 2.0, 2010.
28. Skågeby, J. Gift-giving as a conceptual framework: framing social behavior in online networks. *Journal of Information Technology* 25, 2 (2010), 170-177.
29. Taylor, A. S., Harper, R. Age-old practices in the 'new world': a study of gift-giving between teenage mobile phone users. *CHI'02*, ACM (2002), 439-446
30. Terrenghi, L., Zimmermann, A. Tailored Audio Augmented Environments for Museums. *IUI'04*, ACM (2004), 334-336.
31. Tolmie, P., Benford, S., Greenhalgh, C., Rodden, T., Reeves, S. Supporting Group Interactions in Museum Visiting, *CSCW'13*, ACM (2013) forthcoming.
32. Whitehead, C. *Interpreting art in museums and galleries*. Routledge, 2012.
33. Vom Lehn, D., Heath, C., Hindmarsh, J. Exhibiting interaction: Conduct and collaboration in museums and galleries. *Symbolic Interaction* 24(2), (2001), 189-216.