Seeing with New Eyes: Designing for In-the-Wild Museum Gifting

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ABSTRACT

This paper presents the GIFT smartphone app, an artist-led Research through Design project benefitting from a three-day in-the-wild deployment. The app takes as its premise the generative potential of combining the contexts of gifting and museum visits. Visitors explore the museum, searching for objects that would most appeal to the gift-receiver they have in mind, then photographing those objects and adding audio messages for their receivers describing the motivation for their choices. This paper charts the designers' key aim of creating a new frame of mind using voice, and the most striking findings discovered during in-the-wild deployment in a museum – 'seeing with new eyes' and fostering personal connections. We discuss empathy, motivation, and bottom-up personalisation in the productive space revealed by this combination of contexts. We suggest that this work reveals opportunities for designers of gifting services as well as those working in cultural heritage.

CCS CONCEPTS

• **Human-centered computing → User centered design**; *Empirical studies in interaction design*; Computer supported cooperative work.

KEYWORDS

gifting, museums, cultural heritage, personalisation, voice

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1 INTRODUCTION

In a recent shift towards making museum visits more personally meaningful, museums have increasingly looked into the use of information technology to enrich the museum visit. In HCI research, this has often been addressed by personalisation technology, allowing visitors to tailor their museum experience according to their interests.

There is, however, an alternative strand of research looking into how technology can foster personally meaningful experiences. In this article, we argue that if we truly want museum visits to be personally meaningful, it is more useful to pay attention to human practices that are known to be meaningful, such as the sense of pleasure and specialness evoked by the caring gesture of a thoughtful gift [63, p. 108]. This paper explores the use of digital gifting in a museum context and produces knowledge about 'seeing with new eyes' in museum experiences marked by empathy, motivation, and bottom-up personalisation.

One way to explore meaningful experiences is to employ an artist-lead Research through Design approach, working

with Blast Theory, who have developed a nuanced understanding of the context of the museum visit over many years. Our project takes this approach to bring out new insights about how such experiences can be made personally meaningful for museum visitors. In this paper we report on the design and in-the-wild study of the GIFT smartphone app, which uses the voice of an 'intimate stranger' to frame the experience of making and receiving digital gifts based on museum objects. Each gifting experience also creates a uniquely personalised museum visit based on each participant's investment of time and effort in making or discovering a gift.

2 BACKGROUND

Museum experiences

Museums and galleries have been receptive to the adoption of technology to enhance the presentation of artefacts. Most often this has taken the form of electronic guides, based on personal mobile or dedicated devices, which augment exhibits with digital content curated by the museum staff [6]. However, it has been recognised in both the fields of museum studies and HCI that the successful adoption of technology needs to respond to contemporary concerns around interpretation, socialisation and personalisation.

A trend in museums and galleries has seen curators and exhibition designers move away from providing a single interpretation of exhibits. Instead, they support visitors in engaging with multiple and possibly contrasting narratives, and provide material that supports visitors in making their own interpretations [52, 62]. A range of mechanisms to support visitor contributions has been explored by researchers, including social media [31, 57, 61], tagging exhibits [1, 7, 14], specially developed interactive public displays [15, 56], and visitors creating hybrid exhibits [2]. Previous research projects, such as *Retracing the Past* [22] and *Reminisce* [13], have shown that allowing visitors to record voice messages is a particularly effective way of sharing memories and opinions with others in the museum setting.

It has also long been recognised that many museum experiences are social, as most people visit museums with small groups of friends or family [20]. However, many technology-enhanced visitor experiences, particularly for mobile devices, target use by individuals. To support co-located social interaction, previous work has explored techniques such as designing devices for group use [50], sharing personal devices between groups [42], supporting collaboration through assigning different roles [5], and eavesdropping on the content being consumed by other visitors [3].

Alongside these concerns, there has been a growing interest in personalisation, which involves selecting or adapting content based on the visitor's preferences, prior knowledge or visiting style [4], to both help with the large amount of information that is increasingly available through digital technologies and to move away from the generalised labels aimed at a diverse range of people. It can be challenging for systems to build up knowledge about a visitor in the museum context, as visits to individual museums are often one-off and relatively short-term activities. There is a large body of research on the building of user models (e.g. [21, 54]) and matching content to users in museums (e.g. [19, 60]). However, the resulting categorisations are often overly simplified and not of practical use to exhibition designers [4]. In contrast, the project we describe builds on work by Lesley Fosh et al [23, 24], who proposed that the practice of gifting could be used in museums to create deeply personalised and social visits based on visitors' knowledge of each other.

Gifting experiences

Gifting has been an area of research in anthropology and sociology since the pioneering works of Bronislaw Malinowski [35] and Marcel Mauss [37], which continue to inform work in areas such as consumer and market research [8, 12, 29, 51]. Gary Davies et al [18] differentiate between 'relational' gifting – the type familiar to anyone exchanging gifts during the holidays – and 'transactional', often impersonal practices such as tipping, bribing, or giving to charity. The GIFT app is designed for gifting between individuals as a relational phenomenon that can alter relationships [47, 48, 51]. Thus we restrict ourselves to relational gifting in which 'the gift involves the selection and transfer of something to someone without the expectation of direct compensation, but with the expectation of a return' that can be as simple as a 'social or psychological benefit' [18, p. 414]. Effort in selection and transfer is understood as an important part of relational gifting [45], and Julie A. Ruth et al define 'affirming gift experiences' as those that can evoke 'empathy' in both receiver and giver and validate their relationship [48, pp. 390-391].

Within the HCI and design literature, gifting tends to either emerge as a finding [30, 33, 39], serve as a metaphor or framework [9, 27, 44, 49, 55], or stand as the topic being directly addressed [46, 53]. Some of this work discusses the importance of effort in conveying meaning, including Odom et al's observation of teenagers adding notes and images to playlists [39, p. 1496] and Muntean et al's use of effort to explain differing cultural values [38].

In an interview study by Hyosun Kwon et al [32] exploring gifting physical and digital items, the authors found that the 'excitement' (i.e. any positive response opposed to 'calmness') felt by givers and receivers was lower for digital than for physical gifts ([32, p. 2375], see also [33]). They suggest a five-stage framework of preparation, exchange, reveal, use, and reflection [32, p. 2374] to guide design for digital gifting. In 'reflection', the important work of developing what Marsha L. Richins calls the 'private meanings' of a gift can take place

[43, p. 506]. Private meanings can include memories and feelings centred on the giver-receiver relationship.

As Ruth et al [48] do, Jayne Wallace connects gifting with empathy. Wallace et al used what they called 'design probes' [58], inspired by 'cultural probes' [25], to build delicate relationships between designer and participant based on empathy (see also [64]). She described her probes in Mauss's [37] terms: she gave the probes in the hope but not the expectation that they would encourage the deep sharing of personal meaning that was so important to her designs. Empathy can also be achieved via more mundane practices such as nurses of dementia patients who 'spend time with clients... in order to build a confiding relationship as a base for an empathic engagement with one another' [59, p. 2635]. The 'cognitive empathy' [16] displayed by these nurses is more common [41] than the 'affective empathy' [16] aimed for in [58]. In either case, 'it is highly important to us that a participant finds some personal benefit from the process' [58, p. 3449].

The GIFT app is underpinned by projects led by Fosh [23, 24] in which gallery or museum visitors gave richly personalised digital gifts to people they know. In Ruth et al's terms [48], Fosh et al designed for 'affirming', empathetic gift experiences. Individual receivers in [24] experienced the gallery according to the interpretations made for them, while the subsequent iteration [23] focussed on gifting within groups. In Fosh et al's approach, givers had to take a researcher-led workshop, commit their receivers to a scheduled visit, open themselves to potential anxiety [24], and/or coordinate group gifting [23]. The GIFT app attempted to mitigate these issues by automating the process as much as possible and freeing users to exchange in any way they wished without losing Fosh et al's critical achievement of personal meaningfulness in a museum visit.

3 METHODOLOGY

This work falls under the broad umbrella of Research through Design (RtD) [65] in which research findings emerge from reflections on practice. The project was also artist-led, driven by a team of professional artists who have previously worked in major museums and brought their distinctive interaction design skills to bear on the challenge of creating intimate and personal experiences. The engagement took place over a period of more than a year, including three major workshops at the museum in which successive versions of the app were iteratively prototyped and tested, though these earlier iterations fall outside the scope of this paper.

The deployment took place 'in the wild' [17], with the working app offered to the public at the museum. It was advertised by the museum, whose front desk was stocked with cards inviting visitors to take part, and by Blast Theory, whose staff invited visitors in person as they approached the entrance. Both also promoted the deployment online.

As is typical with an RtD approach, we report both the artists' rationale and the public's response to the app before drawing out research findings in the form generative design knowledge [26] at an intermediate level [34] that can aid further work on designing interactive museum experiences.

4 DESIGN

In this section, we detail the design of the GIFT app as deployed for feedback in July 2018. This is used in subsequent sections to trace how design rationales correspond to visitor responses and contribute to our discussion of empathy, motivation, and bottom-up personalisation.

The GIFT App

The GIFT app as deployed in July 2018 was a smartphone app for museum visitors to create and exchange gifts. It was designed to be accessed in the same manner by gift-makers and gift-receivers. The original plan was for it to be downloadable with no intervention by Blast Theory and only minimal support required from museum staff. Partway through the design process, though, it became clear that Blast Theory would need to be on site to lend latest-generation iPhones and headphones (see Fig. 1) to circumvent problems with stability on other platforms. While the app invited all users to investigate the museum in person, it was designed not to be location-sensitive so that it could be used essentially anywhere.

Users were first asked to register with their name and email address. Next, they could select whether to receive a gift if there was one available, or to create a gift. For givers, the app first asked them to decide on a receiver, audio record a greeting for them, and enter their email address. Givers then listened to voiceovers (see Fig. 2) that asked them to explore the museum with their receiver as a 'filter' for their visit. When givers chose an object to give, they were asked to photograph it and record an audio message into the iPhone for their receiver about why they chose that object. Givers also recorded a clue telling the receiver where to find the object. They could listen back to their recordings and re-record as often as they liked. Givers chose up to three objects in one gift and could make multiple gifts. When finished, they were asked to enter the title and artist for a song to complete their gift.

The receiver's experience reflected the giver's. The original intention was for receivers to see an email invitation to download the app and receive their gift, or be notified via the app if it was already installed. As with the givers, though, receivers had to use the loaned iPhones and headphones, and they used the app's audio to learn what was expected of them (see Fig. 3). They saw the photo taken by the giver and followed the clue to see the object. They then heard the giver's recording of why that object was chosen. When

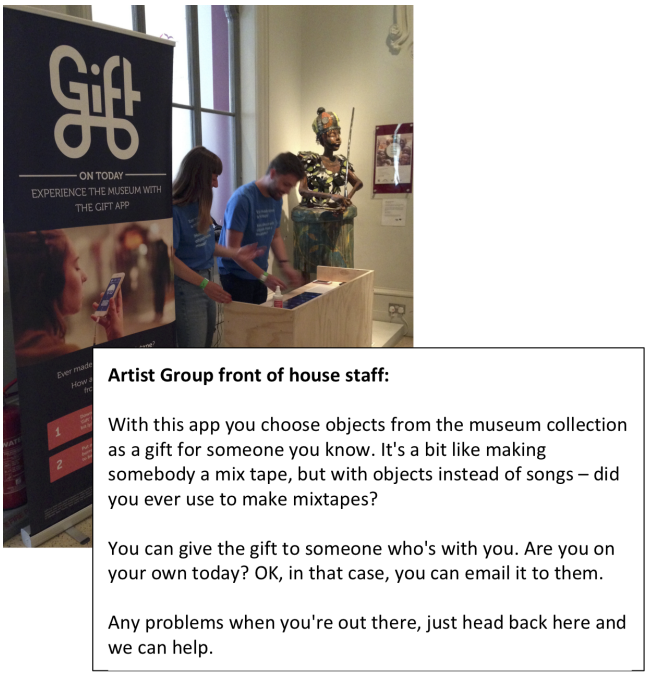

Figure 1: Blast Theory front-of-house tech station.

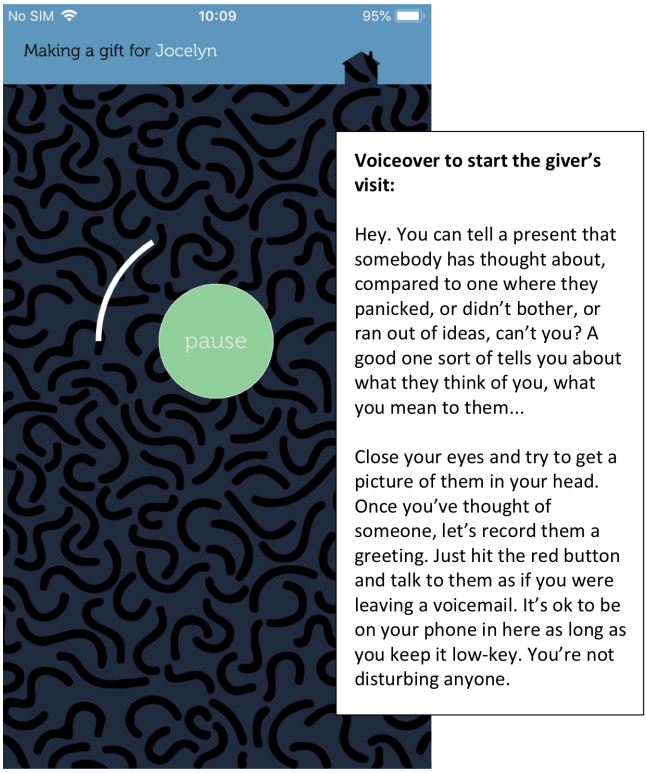

Figure 2: Voiceover making herself feel familiar to givers.

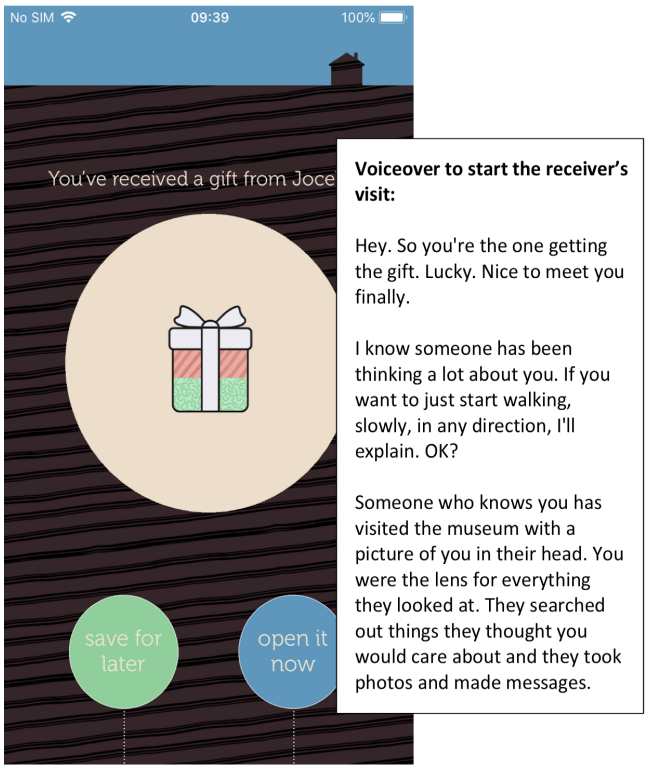

Figure 3: Voiceover on the effort the giver has made.

all objects were found, receivers heard the song chosen for them. At the end, receivers were invited to audio record a response to the gift, which was then sent to the giver.

Design Rationale 1: The Museum's Needs

In an interview during the final stages of development, Blast Theory co-founder Matt Adams [1] explained that one of the most important design intentions was for the app to respond directly to its context by 'addressing some of the needs of museums who are attempting to respond to the rise of... mobile digital media... often with small budgets, very small teams, lots of time pressure...'. To meet this need, Blast Theory designed for museums under financial and human resource pressure (as so many are). After all, an app that would engage end users but face insurmountable barriers to uptake is, in the end, only an exploration of half the design space. Thus the GIFT app emphasised design choices that would support its in-the-wild deployment. This motivated a design where givers and receivers would make and get their gifts in the museum. The designers accounted for the likelihood that many receivers would be unable or unwilling to come to the

[1] All citations of Adams refer to interviews conducted by the lead author via Skype in April 2018.

museum on short notice during the deployment, but they retained focus on in-situ gifting.

This perspective also influenced why the app was made as self-contained as possible. Fosh et al's designs for giving gifts of museum items tailored for an individual receiver [23, 24] were very time-intensive and required skilled workshop leaders. Blast Theory Creative Lead John Hunter knew that people come to museums 'when they have other demands on their attention, when they have other plans, particular needs or preconceptions'[2]. They wanted to invite gifting without burdening participants with taking part in extensive workshops or adding to the museum staff's workload by requiring them to organise these events. However, partway through the design process, it became apparent that deployment would put more strain on the museum staff than would be reasonable to ask for, despite the unstinting support of the museum's Digital Manager. Blast Theory therefore factored in a large number of their own staff to recruit participants, explain the proposition, gain consent, arrange the loan of phones and headphones painstakingly set up ahead of time, answer questions, retrieve the loaned items, and solicit feedback.

Design Rationale 2: Intent

Adams described another key aim with this design as 'exploring different forms of engagement inside the museums and finding a synthesis between the museum, its collection, and its curatorial framework, and the visitor and their social network, and looking for how you might build meaningful relationships within that set of connections'. His term 'social network' refers to an individual's friends, family, colleagues, etc., rather than their online social networks. This aim focused on the context of 'meaningful relationships' that would be brought into the museum visit.

Blast Theory needed to do more than task people with the making of a gift. To work with meaningful relationships, they decided to try to shift people, gently, out of thinking in terms of a standard museum visit and create in them an active intent to make a gift for someone they knew. As Hunter put it, 'you can very quickly put people in a frame of reference, when you give someone a present and all of the attendant things that come with that'. If Blast Theory could stimulate the positive intention to give a gift within a 'meaningful relationship', then visitors' means of engaging with the museum itself might change.

[2]All citations of Hunter refer to interviews conducted by the lead author via Skype in July 2018.

Design Rationale 3: Listening and Speaking

To help achieve the desired frame of mind, Blast Theory based their app around audio. Visitors listened through headphones and spoke out loud. The primary design choice to promote this contextually uncommon behaviour was to use voiceover to encourage visitors to speak. Hunter described their rationale in this way: 'Speaking is not a common part of a visit. ... In order to ask somebody to speak, we felt like we needed to give some voice, too, in a way that hopefully felt more approachable than written instructions asking you to do the same thing'. In other words, Blast Theory offered a 'gift' of speech in the hopes of soliciting the same from app users (see Fig. 2). To maintain focus on the audio and to accommodate museum visitors who might not be technologically savvy, the visual design was extremely simple, especially during voiceovers. At those points, the screen showed only a pause button and progress indicator. Orienting the experience towards audio also contributed to another important aim, that of encouraging engagement with the physical museum rather than with the smartphone screen.

Design Rationale 4: Voice

The voice of the app had the personal tone an 'intimate stranger', far removed from the neutral, informational voice one might expect from a typical museum guide. Hunter explains: 'Voice... allows her to be really familiar with you because this idea of giving and receiving gifts, and the way she talks about it, is very human. We've all got an experience of it so... it allows her to put herself in the same boat with you and create a sort of instant familiarity'. When asked to describe how he hoped a visitor would perceive the tone of the voice used in the app, Hunter replied, 'familiar, relaxed, provocative'. By 'provocative' Hunter meant provoking action rather than being romantic. Hunter explained 'that she would challenge you, not put ideas in your head but she would encourage you to do some thinking and exploring'.

The voice addresses the visitor one-on-one, using phrasing and word choice that work with its tone to imply a familiarity more in keeping with a friend than a museum docent. Hunter explains the design intention 'to establish an intensity but not to create an anxiety, she's not over-familiar, but the use of that voice allows us to ask you to think quite personally quite early on'. Blast Theory understood that this tone was not something that could be achieved in all instances for all people. 'Some people really crave that intimacy. Some people [feel] distanced by it because it's just not what they [are] expecting. You have to go one way, and then let people respond' (Hunter). Notably, the design does not push this sense of familiarity into a fictional realm. The speaker acknowledges that she and the visitor are, in fact, strangers.

Design Rationale 5: Focus on Relationship, Not Gift

What, exactly, does the app (via the voice) expect a visitor to do in creating a gift? Blast Theory gave careful attention to the amount of guidance the app would provide. Voiceover guided visitors step by step through selecting an object, taking a photo, and recording a comment. However, there was no guidance on what to choose or where to choose it from: instead, the voice instructed the giver to concentrate on their receiver, not unlike the strategy of choosing a perspective from which to learn about the exhibition in the work of Petrelli et al [40, p. 284]. The voice asked the giver to 'let that person be your filter as you walk. Ignore the things you know they're not going to care about, go and learn more about the objects you know nothing about. Let them know the effort you've gone to, to choose the right things'. Although the app never articulates the skills needed to create a gift, the design team worked to solicit 'thought, consideration, emotional investment, empathy, and skills in writing, skills in photography, orienteering...' (Adams) to the extent that each participant was willing and able to invest them into their gift. In parallel, the receivers' voiceover continually directed their attention toward the giver's intentions. Receivers took on an active role through recording their responses and walked away with the songs chosen for them ringing in their minds, again concentrating on the giver over the gift itself.

Design Rationale 6: Effort

Blast Theory envisioned the process of making a gift as involving 'effort' in terms of one or more of the following: 'walking greater distances, for example, looking more carefully, spending more time on something, articulating really clearly what somebody might not immediately see but which you've seen' (Hunter). These concrete actions were similar to those in Fosh et al's designs [24], yet the GIFT app needed to provoke sufficient effort without any co-present human instruction. Blast Theory saw these types of effort as particularly valuable in gifts that require no financial outlay. 'We put a value on your time, because that's really what you're giving. ... We're asking you to think and to invest emotionally' (Hunter). Hunter's observation is supported by the gifting literature [45] as well as by recent work in HCI and design on exchanges of Christmas cards [28] and digital music tracks [53]. Thus effort became a condition to design *for*, a relatively unusual perspective in a field historically dedicated to efficient interaction. Also, given Blast Theory's approach to gifting as a relational practice, they worked to make this effort legible to receivers. A receiver in the museum might notice if objects were chosen from distant rooms (walking greater distances), photographed from an unusual perspective (looking more carefully), or commented on at length or in detail (spending time and articulating reasons). Effort in terms of emotional investment might also be heard through the quality of the giver's voice or their choice of words. In the same way, responses recorded by the receiver would indicate their thoughts and feelings around the gift.

5 FINDINGS

The GIFT app was deployed in the wild on 18, 19, and 21 July, 2018, at the Brighton Museum and Gallery in the city of Brighton and Hove on the south coast of England. Of the entire visitor population over those three days, 21.4% used the app, and all users were invited to give feedback. Of the 114 who did, 57 filled out a short questionnaire that sought answers most pertinent to the museum (whether they learned anything new), to the developer (whether the app failed), and to the research team (whether and how the app altered visits). A further 57 agreed to a full interview, which elaborated on these areas of interest and gave access to their gifts' contents. No one who gave feedback was excluded from analysis other than those with irregularities in their consent forms.

Many participants either took part on their own or made gifts for people who could not visit the museum before the end of the deployment, leading to a preponderance of givers (66). Four received without giving, and 23 both gave and received: 10 of these exchanged gifts with each other. All interviewees who both gave and received were asked about the two activities separately. Only 18 receivers gave feedback on the gifts they received. Responses to receiving usually echoed responses to giving, and responses to questions about the overall experience primarily described the giving process. We separate out findings about receiving where relevant.

In terms of gift content, givers tended to select items that caught their eye, which led to a relatively high proportion of famous or striking objects. For example, in the main gallery, the most commonly gifted object was the large red sofa shaped like 'Mae West's Lips' designed by Salvador Dali, though each of these photos was taken from a different perspective. Only 18 objects in the collection were chosen by more than one person, leaving 70 unique gifted objects. In the same vein, audio recordings included both straightforward descriptions and personal jokes with no meaning to an outsider.

Below, we summarise the most productive themes seen in the data from our 114 participants as a means of reflecting on Blast Theory's design. Themes were developed using a combination of a priori and inductive analysis. The former included questions regarding usability and those directly addressing issues left unresolved by Fosh et al [23, 24], such as feelings of anxiety. We found inductive analysis necessary for responses regarding relationships, objects, and the overall experience. These related to each other in unexpected ways, leading to Findings 1 and 3 and to our Discussion topics.

1: Seeing with New Eyes

The most consistent finding involved participants describing a new way of looking at or thinking about museum objects. They saw the objects 'with other eyes' (P4), or 'through fresh eyes' (P47), looking 'in a different way' while 'imagining someone else and thinking of them' (P47), looking with 'a different meaning to me' (P3). Similar metaphors were voiced without prompting by a further nine (P23, P39, P72, P90, P93, P98, P147, P182, P202). Those who spoke about their thought processes spoke in terms of taking 'a different point of view... otherwise I am... just seeing them' (P140), or 'think[ing] a bit differently about the space I was in and what I was doing' due to 'having to actually deliberately think about another person' (P64).

Five participants articulated how bearing their receivers in mind worked. One described her reactions to objects during ordinary museum visits as curiosity about how the objects were manufactured or used, whereas looking from her 'artistic' boyfriend's point of view induced her to look at 'where they got the inspiration from, the colour, or what material they used' (P152). Another explained dramatically that looking through another person's eyes 'made art seem alive' (P242). One noted multiple levels of engagement happening at once: 'You're actually looking for stuff that someone else would enjoy, but you're also looking at your own experience and what your eye is drawn to' (P87). Some, like P5, anticipated how their receiver, too, would 'see it through a different lens' (also e.g. P185). Receiver responses were similar, such as P152's observation that her boyfriend's choices were 'like looking in a mirror' by showing her how he had noticed her recent attempts to build confidence. The vanity mirror he chose for her lost its connection to 'vanity' and became instead an indicator of his loving support.

2: Connecting with Objects

We asked whether participants formed personal connections to the objects. One of our participants responded confidently: 'If you can choose good objects, you will feel a personal connection to those objects as well' (P200). This seems to have been the case for those such as P184 who 'really engaged' with objects she 'would have perhaps otherwise walked past'. For P181, the connection was a visceral 'instinct' that connected her to her receiver. Imagination played a part for others, most often imagining the receiver interacting with the object or its place of origin (e.g. P93, P143) or imagining themselves interacting with the object (such as P159 picturing a piece of furniture in the home she shares with the person she made her gift for, also P52, P186). Gift receivers felt particularly attached to the objects given to them and spent time examining them, even when 'I don't think I would have necessarily looked twice at them' (P434, also P98, P152). Unusually, P137 felt more connected to the objects she received than those she gave, perhaps because she was less curious about the museum than about her giver, a family member she had not seen in many years.

3: Connecting with Receivers

One finding that struck us was how many participants conflated objects with people. For example, when asked whether they made a connection to the museum objects, many responded with the connection they made to their receiver or giver. Some specified that the connection they now felt to an object only existed because of its new association with the receiver: 'I did look at them from my own perspective, but also from someone else's perspective and what we might have in common about the object. So it was not only about the objects, but also about our relationship' (P82). Another found that the process of finding an object 'brought back great memories and important things in our relationship' (P156). Other connections were projected into the future: P82 described how the act of relating objects to her sister meant that she would remember those objects in light of her sister in the future. Receiving a gift also prompted participants to connect with their givers, but for most, the act of giving overshadowed the act of receiving. Those who received as well as gave usually expanded on the connections they felt with their receivers rather than their givers.

Roughly 80 mentioned personal meaningfulness. Twenty described their experience in terms of its 'emotional' impact or 'intimacy'. One explicitly used the gift-giving opportunity to recreate a sense of family cohesion eroded by physical distance: 'I felt would take them back them into this feeling of being a family, in a way' (P71). Contrary to one of the key design aims, these feelings of personal meaning did not seem to depend on physical proximity to the museum. Of the 59 gifts whose givers or receivers gave feedback, 71% were sent to distant receivers. The prevalent attitude towards proximity might be best summed up by P197's observation that 'the person that I will be choosing to send gifts to is obviously a person who is not near to come to the museum. If they were I'd bring them...'. In fact, a few complained about the uselessness of leaving a clue for where to find the object in the museum. Some participants explicitly linked the voice of the app and/or their own audio contributions to the feeling of creating a personal gift in a way that illustrates Blast Theory's design intention: 'Maybe this voice on the headphones makes you speak to the person you want to send your gift to in the same manner. This is very, very good' (P202). Eight commented that a distant receiver would enjoy hearing the giver's voice (P37, P72, P90, P133, P140, P143, P173, P182), and four felt the same way about their receiver hearing the song they chose (P90, P173, P200, P434).

4: Framing the Museum Visit

Regarding the app's role in the museum visit, responses were more diverse. Some thought the app had no bearing on their visit (e.g. P11, P73, P197), but many more felt that the app influenced their entire experience. Ten reported feeling a 'focus' to their journey (e.g. P46, P182). Another 23 spoke in neutral or positive terms about the app providing a different 'guide' (e.g. P9, P159, P185), 'frame' (e.g. P14), or similar for their visit. P182 observed that injecting gifting into a museum visit has the potential to create 'a new experience of that space, otherwise you might not come as often'. For two, the app was conceptually framed as no more than 'another tour' (P142), and for five it posed an unwelcome distraction (P11, P96, P140, P154, P179). As the app left the choice of objects up to the user, it was 'not a guide that tells you what's in the collection but guide in the sense that who tells you how to approach it' (P9, also P200). P23 found it 'not so brutally curated' as other museum guides, and P14 called it a 'fresh-eyed way of walking around' the space. Nearly a quarter of participants (23) described their interaction with the museum in terms of the 'freedom' the app gave them. As no one is likely to take on a new structure or framing for a museum visit without provocation, we feel that P98 sums up many people's experience: 'it was quite nice to be made to do it'.

5: Getting Personal with Voice

Blast Theory foresaw difficulties in persuading people to speak, and some participants felt uncomfortable. Some (e.g. P5, P87) spoke in their native languages (not English) to minimise the chance of being overheard. P11 went into a corner to record her audio, P47 covered the phone with her hand for a bit of privacy, P172 put on jokey foreign accents to soothe her nerves, and P187 self-censored. The motivations behind such actions have been described elsewhere (e.g. [23]) and are unlikely to be solved for all users by a single design choice. However, it is interesting to note that these participants felt motivated enough to invest effort in developing strategies to deal with their anxiety, and that 16 participants (about 1 in 7) expressed no reservations whatsoever. As P55 put it, 'If you are alone, it's quite nice because you can use it to then almost share that experience that, in a way, you might share with someone if they were with you'.

Several participants grew to tolerate or even enjoy the process of recording in the public space of the museum, but only after their first attempt. Thirteen said that speaking in public was a negative experience for the first recording they made, but six soon got over their discomfort, and the other seven went on see the recordings as a positive element of the experience. And, because many other participants noted that the audio recordings made them feel awkward but still went on to finish the gift, it seems likely that for many who did not mention specific strategies, the process still overcame their feelings of awkwardness.

6 DISCUSSION

Overview

Our discussion synthesises the design intentions of this Research through Design project and the findings from its in-the-wild deployment. We identify and expand upon the three most relevant topics generated by Blast Theory's design process for personally meaningful gifting experiences in museums: empathy, motivation, and bottom-up personalisation. Each of these offers new knowledge for HCI and design, gifting, and museums. We argue that Blast Theory's process created a new design space for *'what might be'* [26, p. 940, emphasis in the original] in museum and gifting contexts.

Empathy

The GIFT app reveals how a culturally significant practice such as gifting, done in a museum, can result in empathetic responses that colour both the gifting and the museum visit. Empathy did not emerge as an explicit topic in the foundational work by Fosh et al [23, 24]. Nor was it a direct aim of Blast Theory's design. However, empathy can be seen in Fosh et al's deep concern for how her receivers responded to their givers' 'very personal' choices and how givers responded to their receivers' reactions [24, p. 5]. It can also be seen in Design Rationale 5's focus on the human receiver over the gifted object or any overt expectation of return [18]. In contrast to designing explicitly for empathy *per se* [16], Blast Theory have indirectly designed empathetic experiences by encouraging participants to perceive the museum through the eyes of their gifting partner.

Hearing the voice of an intimate stranger jolted participants into an unexpected experience that laid open the space between impersonal museum visit and personal gifting experience. The 'intimate stranger' straddled these two contexts and instilled an intent to create a pleasing gift (see Fig. 2) or reflect on the giver's intentions (see Fig. 3). The voiceover consistently referred participants back to their gifting partner and memories of their relationship. Participants could therefore use the app to explore the various 'private meanings' [43, p. 506] that museum objects might entail, as indicated by the many references to 'seeing through their eyes' (e.g. P182).

'Seeing through new eyes' also indicates the types of empathy engendered by the app. For the most part, participants engaged in the most common type, 'cognitive', in which givers try to understand the feelings their receivers would have in response to their choices (or in the case of receivers, the feelings their givers had in making their choices) [16, p. 14]. We refer back to Wallace et al's appreciation of the

value of limited, professional intimacy shown by nurses to their dementia patients [59] and reflect that the cognitive empathy evidenced by participants was appropriate to their outward-facing conduct in the public space of a museum.

To the limited degree that participants, particularly givers, engaged in any 'affective' empathy – feeling the same feelings as the person they had in mind [16, p. 14] – those feelings tended to transfer to the chosen objects or the experience as a whole. We refer back to the tendency of participants to reply to our question about making connections to objects with comments about how close the experience made them feel to their receivers. Participants who reported strongly affective senses of connection spoke of them as they developed throughout the process choosing objects, deciding how best to represent them visually, reflecting on their meaning, conveying that meaning through the spoken word, and imagining their receiver's reaction (or reflecting on their giver's understanding of their relationship).

Motivation

For designers of digital gifting services, we offer a deceptively simple observation: gifting experiences should be worthwhile and enjoyable *in their own right*, regardless of the gift's content. For givers, the process should be one they appreciate no matter what gift they create. For receivers, the 'exchange' and 'reveal' of the digital gift – in other words, finding out they have a gift and then learning what it is – should aim to be at least as 'exciting' as it is to 'use', just as with physical gifts [32]. Of course, the gift itself will ideally be satisfying to give and receive, as well. But presenting gifting as nothing but a task to be done would run counter to nearly 15 years of third-wave experience design research [10], and the task will probably not sustain the personally meaningful engagement that an enjoyable gifting experience can evoke.

'Affirming' gifts, which validate the personal meaning the receiver or relationship has for the giver, tend to 'cost' in terms of time, thoughtfulness, care, and emotion regardless of financial outlay [48]. The hallmarks of 'affirming' or even 'strengthening' gift experiences [48] are precisely the kind of effort that the app promotes. Fosh et al arrived at similar findings when they noted that the exertion of gift-giving effort was enjoyable though anxiety-inducing [24, p. 8], which they ameliorated by scaffolding less intense small-group gift experiences [23]. Blast Theory were careful to take motivation into account, as can be seen in their design intentions around intent and effort. Our findings indicate that for the most part, people found satisfaction in the effort to create a meaningful gift that they or their givers went to. We believe that the empathetic connection between giver and receiver provided the motivation necessary to invest this effort.

The need for intrinsic motivation was especially clear in the design aim to create engagement through speaking out loud into a phone inside a museum, despite the fact that this is an uncommon and/or uncomfortable behaviour. Participants not only made an effort in terms of deciding what to say and saying it well, but the ones reluctant to speak in public also invested effort in overcoming a mild social taboo. The bare fact that an app told them to do it was almost certainly not enough motivation on its own. Nothing prevented them from abandoning their gift and leaving partway through the process, as a few did. However, the intimate voice in their ears created instant access to memories of their motivating relationship. Their motivation was supported by the fact that they were not the only ones taking part, the reassuring presence of the front of house staff, and their curiosity to see what the rest of the gifting process entailed. We also believe that overcoming the initial discomfort of speaking may have functioned as an investment in the gifting experience. Taken together, these elements supported their motivation to see the app through to the end – and therefore, along the way, made them content to exert the effort that the app was so carefully designed to invite. Thus we explicitly state that designing for effort can be moot if users do not feel motivated to make that effort for their own sakes.

Bottom-up Personalisation

Personalisation was one of the first issues addressed by Fosh et al, and 'deep personalisation' is one of their key contributions [24]. Where Fosh et al turn to recommender systems for future work [24, p. 8], we suggest that museum professionals may want to take the leap of faith that this arts-based intervention is based on. Blast Theory was never sure how people would make sense of digital gifts scaffolded by an app using the voice of an 'intimate stranger' to promote personally meaningful gifts made from museum objects. Their app made the most of that uncertainty by framing the museum visit in terms unique to each visitor, or even to each visit.

To date, museum efforts at personalisation have largely been done in a broad-brush, top-down manner, based to a large extent on demographics and surveys [11, 24, 36]. Blast Theory's design suggests a complementary mechanism: bottom-up personalisation. If museums begin from the premise that they will never know the interests and motivations of each individual visitor, they can leverage visitors' own imaginations and memories to make their own personalised interpretations relevant only to their own relationships, and only at the time each interpretation is made. This bottom-up personalisation does not necessarily compete with a museum's other priorities: visitors can create their own interpretations in relation to the museum's existing curatorial practices. Whether reliving happy memories or watching art come alive, visitors can respond authentically to museum objects in a way they had never thought of doing before.

It is also worth remembering that many participants felt an increased sense of freedom in the museum, and no one objected to the idea of claiming museum objects as gifts they could give to another person. We interpret these responses as indirect indications that they felt a sense of personal (not cultural) appropriation. Using their imaginations, they encountered objects that could belong to their receivers. Thus museums can offer objects for visitors to give to others to enjoy in a personally meaningful way, instead of or in addition to viewing them in the museum's own context. This sense of connection through appropriation and gifting provides a potential for new means of public engagement.

The bottom-up personalisation that we feel the GIFT app exemplifies can also be understood in terms of participation. The fact that participants were given no instruction on where to go or what to choose meant that they had to take ownership of their own experience. They did not merely populate the gift: they and Blast Theory's designers co-created a gifting/visiting experience unique to each visitor through their embodied and, for some, emotional experience with the museum. This co-creative aspect is very much in line with the aims of many museums to serve their local communities through participatory curation practices rather than offering a monolithic, top-down interpretation of what the objects mean and how the community should engage with them.

The relationship between visitor and app is not the only framework for understanding co-creation processes, of course. Museums are specially designed spaces filled with expectations for certain types of personal engagement and social behaviour. The GIFT app, in turn, generates a mental and emotional space designed specifically to suit museums as physical and social institutions. As the findings have revealed, the app can alter and expand the museum space it is situated in. Some of Blast Theory's design decisions aimed to harmonise with existing museum practices, such as providing audio content via headphones that preserve spaces of quiet contemplation for other visitors. However, some of their design decisions intentionally coaxed visitors into reinterpreting or transgressing a museum's expectations, such as encouraging them to ignore existing curatorial rationales in choosing their gifts, or speaking into their phones in what might otherwise be a quiet space. Each museum's response to these interventions shows how it, too, participates in the bottom-up personalisation it offers.

7 CONCLUSION

Blast Theory's arts-based app for gifting experiences within museums juxtaposed two very different sets of practices and expectations. Personal memories and connections were evoked in a public space. Participants created and/or received digital gifts made of photos of museum objects taken from anywhere within the physical collection, combined with spoken explanations of their choices, clues of where to find the gifts, messages, and a song. Blast Theory's design decisions resulted in some confirmations of their hunches and some surprises. However, many participants shared the sentiments of P47: 'I think it was definitely an interesting way to look at the museum through fresh eyes. And I have been to this museum a lot, over, yes, 27 years, so having a new way to look at it and interact with it was really interesting'. Coming from a Research through Design perspective and benefitting from qualitative feedback from 114 participants, this work can be the starting point for coming to understand arts-based design for gifting activities in mixed contexts: in this case, museum-situated digital gifting practices. We have drawn implications around empathy, motivation, and bottom-up personalisation for design researchers, makers of gifting services, and museum professionals, respectively.

The GIFT app raises ideas for future work. Perhaps most pressing for museum professionals is concern over the need for front of house staff to support visitors in overcoming the nervousness that some felt in participating in an unknown type of experience in a public place. Blast Theory knew that this would be a challenge, and the deployment highlighted the extent and specifics of that challenge. We acknowledge these difficulties, but we also see potential advantages in building relationships with visitors seen as relational beings who bring their most treasured memories and relationships with them wherever they go. Museums can build on these powerful relationships and possibly discover ways unique to each institution of fostering personal engagement. We also see potential in experimenting with new means of encouraging receivers to come to the museum to receive their gifts, or of using gifting as a way to frame engagement with a museum's digital collection or virtual presence, even for visitors who may never see the museum in person. If this app is scaled up as Blast Theory hopes it may be, the GIFT app and other arts-led interventions may 'change the context in which they operate' [26, p. 943] and help shape the continuing re-evaluation of the purpose of museums in societies where digital interactions are increasingly the norm and where museums are expected to do ever more outreach with ever fewer resources, year upon year.

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