

Gifting the Past in the Present: An Exploration of Evoking Nostalgia through Hybrid Gifts

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ABSTRACT

This study focuses on the hybrid gifting model, where both physical and digital objects combine to create a single gift. For this in-the-world study, we turn to nostalgic emotions. We aimed to uncover if hybrid gifting can facilitate nostalgic experiences through repurposed digital media. In this case, we used a physical chocolate box and a QR code, that when scanned presented nostalgic images and text. Findings from gift exchanges and eighteen semi-structured interviews with givers and receivers are presented through thematic analysis. We reveal the impact on exchanges when nostalgia is evoked, and outline the roles of people, emotions, and objects. The contribution of this work is an understanding of repurposing our growing digital archives to frame nostalgic memories as gifts.

CCS CONCEPTS

• Human-centered computing → HCI theory, concepts and models.

KEYWORDS

gifting, nostalgia, hybrid gifting, hybrid

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1 INTRODUCTION

Gifting has long been important to commercial economies [24], as well as serving multiple social purposes [65]. Benefits of gifting include reaffirming relationship status and integration as part of a group [52, 65]. Gifts come in various forms; in this work we discuss both physical and digital modalities to explore the emerging hybrid

gifting model. Hybrid gifting is defined as the merging of physical and digital objects to create a single gift [38], and works within this space expand on connecting or layering physical and digital materials to create new experiences [37, 69].

Digital objects can be viewed as commodities which we can sell, treasure, and trade [25]. However, this perspective is not always true of digital gifts. Kwon et al. elaborate on how digital gifts can lack visible effort [38], with debates surrounding if digital content is only shared as opposed to gifted [9, 29]. Despite growing personal digital archives and deliberate acts of capturing media with the aim to one day reflect and feel nostalgic [20], it remains unclear the impact of gifting our digital memories. In this work, we turn to nostalgia to explore if we can repurpose our digital media to create hybrid gifts that evoke nostalgic emotions.

Nostalgia is defined as a joy tinged with sadness [78] and is noted for a bittersweet mixture of emotions [5]. Psychologically, nostalgia is associated with boosting well-being [31], increasing self-esteem [59], and facilitating social bonding [79]. Nostalgia is a research interest in multiple fields including human-computer interaction (HCI), where the focus often involves the use of media to evoke nostalgic emotions. Examples include, exploring how devices can support the capture and recollection of personal memories [48], using media to support nostalgic experiences [1], and presenting nostalgic media in various environments such as, museums [73] or elderly homes [47].

Despite substantial HCI interest on connecting nostalgic media, possessions, and physical environments, there remains a notable knowledge gap on utilising nostalgic media within a gift exchange. Motivated by this research gap, we aimed to explore through the vehicle of a hybrid gift, how evoking nostalgic emotions via repurposed autobiographical media might impact experiences of both gift-giver and recipient. Overall, we wanted to assess how nostalgia may be evoked in hybrid exchanges, specifically, in this study with a common gift of chocolate. For the purpose of this work, we define nostalgic hybrid gifts as a gift that intends to create nostalgic emotional experiences. We investigate this using an "in the world" approach [22, 58, 71] via nine gift exchanges.

In this paper, we outline work related to gifting, possessions, and nostalgia. We then discuss our chosen approach to facilitate gift exchanges and semi-structured interviews, leading to our reflexive thematic analysis approach. Within the findings, we set out both

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gift-giver and recipient perspectives from their gift exchange. Following this, the discussion outlines roles within nostalgic hybrid gift exchanges: media, gift-giver and receiver, nostalgia, and hybridity. The contribution of the work is as follows: (1) new knowledge on evoking nostalgia through repurposed media in a hybrid gift exchange from both giver and receiver viewpoints, and (2) an outline of specific roles involved in nostalgic hybrid gift exchanges and recommendations of design implications, challenges, and future research agenda. Overall, in this work we provide reflection on how re-purposing our growing digital memories can be integrated to form part of a considered hybrid gift.

2 BACKGROUND

This review of literature is split into two sections. Firstly, we outline work on gifting and digital possessions. This includes defining the gifting ritual and highlighting specific studies within human-computer interaction (HCI) that have focused on possessions or gifting. In the second part, we discuss nostalgia and outline related work in multiple fields including HCI to understand the characteristics and functions of nostalgic experiences.

2.1 Gifting and digital possessions

Gifts can be defined as “*something given without receiving payment, often in the expectation of reciprocation and of changing the relationship with the recipient*” [23] (p.414). However, the underpinnings of the term relate to social exchange theory, where exchange can include the transfer of emotions, relationships, and objects [6, 12, 44]. Mauss [44] explored gifting as a social fact, and further elaborated on the structure and societal expectations to give, receive, and reciprocate. The social activity of gifting can act as an expression of a relationship [65], and elicit social functions of power, influence, and sympathy [40].

Gifts become part of social circumstance due to associations with identities, relationships, and symbolism [8, 56, 63], thus reaffirming relationship status and integration as part of a group [65]. Further, gifted objects can go beyond their face value and can be transformed to become part of a social setting. The nature of representing personalities and relationships via gifts are what makes them distinct and special from other possessions, this translates commercially to the transaction of objects [24, 52, 56], resulting in a widely researched phenomenon in fields of marketing and consumer research.

Gifts are associated with tangible objects which can be unwrapped [27, 37, 65], with wrappings often providing a sense of ‘surprise’ when receiving a gift [60], although how this unwrapping could take shape for a digital gift is rarely considered. Material gifts are popular due to their readiness to use directly after the moment of exchange [27]. These physical items can contribute to a sense of self and ownership [8], although some argue this is not easily replicated with digital possessions [2]. On the other hand, recently Belk discussed the need to shift away from physical versus digital comparative narratives and focus on the merits of digital objects [25] or on the possibilities of merging physical and digital materials to craft new experiences. Despite this argument, we still lack understanding of framing digital possessions as a gift, with Brano-Illodo

and Heath recently calling for an exploration of what a successful digital exchange may involve [14].

The value of digital possessions [30, 33, 49, 51, 55] is an area of debate within human-computer interaction (HCI). For example, works [30, 51, 55] discuss how we accumulate large volumes of digital media, with attempts made to distinguish what is classed as a cherished digital possession [30, 55]. Themes from these HCI works include how digital material is useful for reminiscence or storytelling [30]. Petrelli et al. [55] further discusses how attaching digital material to physical objects can tell relevant stories [55], which perhaps could contribute to a sense of ‘place’ [51] for curated digital material in the physical world. Despite many of these studies highlighting viewpoints and design recommendations, few deviate from comparative studies, which has contributed to limited knowledge on the place of hybrid products within social rituals.

Aside from gifting, other social rituals such as Christmas [54] and bereavement practices [62, 76] are explored in the HCI space. For example, works outline how technology can be designed to engage in existing emotional and social occasions [54], or how we make these rituals more dynamic via digital design [76]. As technology has advanced and changed overtime so has the gifting ritual. We now send and receive digital gift cards via email, or ‘personalise’ greetings cards with our digital images. Digital gifts can be defined as “*intangible digital objects that are intentionally exchanged as gifts online and in digital formats, not bound to physical containers*” [38] (p.2372). This convenient modality of gifting has been viewed as a suitable replacement for in-person exchanges [36]. Alternatively, there is a debate surrounding the capacity to gift digital content, with the argument that digital media can only be shared rather than gifted, due to the ease of making multiple copies of the same artefact [9, 29, 30].

Inalienability describes how possessions become associated with those who gave us them [77] and may help to differentiate between gifting and sharing, with Spence [68] arguing that both physical and digital objects can inherit a sense of the person who gifted the object. This theory is demonstrated in Taylor et al’s. [74] ethnographic study, which examined text exchanges between teenagers. Findings show that key gifting traits underpin motivations to send, receive, and reciprocate text messages. Despite digital gifting being a convenient approach to send and receive gifts, it is debatable if digital objects can translate into valued and cherished possessions. To address this, our study combines both physical and digital objects within gift exchanges to explore perceptions on hybrid gifts.

Understanding hybrid structures and environments has long been an area of interest in HCI research [10], and emerging work focuses on hybridity within gift exchanges [11, 37, 38, 69]. Golsteijn and collaborators explored merging physical and digital objects, enabling users to create physical objects that embed media. Since then, the concept of merging physical and digital gifts and their wrappings was considered by Kwon et al. [38]. The work reviewed gifting literature to create the five-stage gift exchange model (see Figure 1), which illustrates the five key points in a gift exchange from both giver and receiver viewpoints. Kwon et al. [38] used the model to interview participants on both physical and digital gifts they had received. Findings showed that digital gifting elicits less excitement throughout the five stages as opposed to physical, with lack of wrapping paper and ownership being contributing factors.

Ultimately the authors suggest the concept of hybrid gifting to address the critiques and value perceptions on digital gifts. For this work, hybrid gifting is defined as merging physical and digital materials to create a single gift.

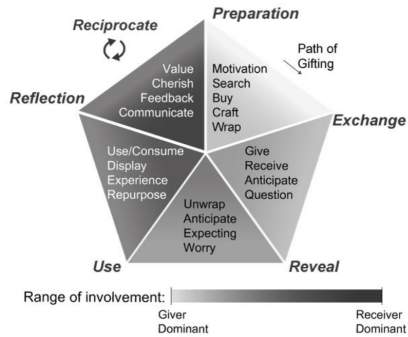


Figure 1: Five-stage gift exchange model[38]

Further work within the hybrid gifting space [11, 37, 69] has presented a physical Christmas advent calendar which could be digitally customised. Findings from the study highlight how a hybrid model supports emotionally meaningful connections between families and friends [37], and the potential applicability of this model to other types of products. Despite these insights, in-depth knowledge on the types and extent of emotional connections formed through the hybrid gifting model remains limited. To address this gap, the focus of this research is to explore in-depth nostalgic emotional experiences evoked via a hybrid way of gifting.

2.2 Bittersweet nostalgia

Nostalgia is defined as a joy tinged with sadness [78], often noted for positive attributes such as promoting self-esteem, providing opportunities to form social connections, and an increased sense of meaning in life [59, 79]. On the other hand, negative emotions such as sadness, regret, loss, and loneliness can be associated with feeling nostalgic [32, 79]. It is this mixture of emotions which has led to many definitions of nostalgia. Batcho [5] describes how a once medical term has morphed into a widespread set of emotions, and now has multiple classifications. For example, vicarious [67], collective [3], restorative [13], reflective[13], and personal which is defined as autobiographical experiences from memory [67, 72, 75]. As the definitions and intricacies of nostalgic experiences have expanded over the decades, interest in the topic as a research area has also grown.

One of the reasons for this growing interest in HCI, is the ability to reminisce over personal digital archives and the ability to feel nostalgic through media [28]. A common example is the widespread use of photograph applications, where we now scroll through our images instead of turning physical pages in photo albums. In some cases, we capture photographs specifically with the aim to one day reflect and feel nostalgic [20]. Prior works [21, 25, 28, 35] illustrate use cases for our digital photographs such as re-purposing our personal photography for public consumption in museum contexts, or sharing our images on social networks, yet from an HCI perspective

we know very little about framing these memories as a gift for those closest to us.

Studies focusing on nostalgia in CHI and DIS communities have varied contexts and taken differing approaches to exploring technology-mediated-nostalgia. Examples have range from how nostalgia proneness can impact the likelihood of keeping virtual possessions after a relationship breakup [17]. The development of physical artefacts to facilitate reminiscence and nostalgia in care home settings [47], and Sungkajun et al. [73] explored an interactive art installation that evoked nostalgia. The exhibit displayed stories of people and their backgrounds on a pond-like surface, one participant from the study noted how the experience would make a "great gift" for someone.

Further, a recent CHI example [42] explored facilitating and designing for bittersweet emotions when users interact with recommender systems; such emerging studies demonstrate the commonplace of bittersweet media in our everyday lives. However, further exploration on exchanging our increasing bittersweet media and memories is required. All of the discussed examples display elements of fostering social connections through technology, but also highlight an awareness of the negative outcomes when designing with or for nostalgia. Yet, an in-depth study of the implications when gifting personal bittersweet memories is non-existent. On the other hand, some fields distinguish clear commercial uses for embedding nostalgia.

The fields of marketing and consumer research have often viewed nostalgia as a tool for brands to form connections with consumers [45, 46], yet rarely highlight how brands could facilitate nostalgic experiences between two or more consumers. Further studies elaborate on the relationship between consumer nostalgia and purchasing intentions [53, 66]. For example, if a product or advertisement reaffirms a consumer's identity or heritage it makes the purchasing of that product or service more likely, but often these studies focus on collective or vicarious nostalgia, meaning knowledge on tailored autobiographical experiences remains limited. There are few works within the field that discuss gift exchanges and nostalgia, however there is work to suggest subtle links between self-gifting, luxury brands, and nostalgia [34], but not interpersonal exchanges.

The reviewed literature outlined relevant value debates of physical and digital possessions. Thus, highlighting the need to shift away from comparative studies and explore the possibilities of merging both physical and digital objects to craft new experiences. There is a clear absence of research bringing together our bittersweet media, digital memories, and gifting, despite our growing online archives. Motivated by this gap, our research will address "how can a hybrid gift help to facilitate nostalgic experiences?". And, "what are the implications of trying to evoke nostalgia through personal digital media for both gift-giver and receiver?", with an aim to make a knowledge contribution to technology-mediated reflection in HCI.

3 METHOD

In this section, we discuss our approach to address the research questions. We begin with an overview of the hybrid gift exchanges between pairs of participants, we further expand on recruitment methods, how givers created their gift, and the design rationale.

3.1 Approach

This work took an "in the world" [22, 58, 71] approach due to the aim of capturing everyday experiences of sending or receiving a gift. In this case, home environments were a suitable place for exploring a proposed new gifting modality within dyadic relationships. The aim was to explore gift exchanges between these pairs, which included one gift-giver and one receiver in each.

The hybrid gift consisted of chocolate, a nostalgic photograph, and a message. Gift-givers created their gift online, the process involved selecting a flavour of chocolate (milk, dark, white), and uploading a nostalgic photograph of their choice, with space provided to add an optional text message. A QR code containing a link to a web page with the embedded digital content was then attached to a gift label on the wrapped chocolates. The gift would then be assembled by the researcher and shipped to the chosen recipient.

Upon receiving the gift, recipients were provided with brief instructions, but these did not dictate any order for opening the components of the gift. Recipients could scan the QR code to unwrap the nostalgic layer. After the exchange took place, both giver and recipient were interviewed separately to discuss their experiences of creating and consuming the gift. This section will elaborate further on the rationale for the chosen approach.

3.2 Participants

In total, eighteen participants were recruited for the study, consisting of nine pairs exchanging gifts. Participants were recruited via word of mouth, social media, and email. We aimed to recruit participants who wanted or needed to send a gift in the following month, givers would be recruited first and they would inform their chosen recipient of the study.

Prospective recipients would then be screened to ensure they had sufficient technology access, no food allergies, and were not classed as high risk during the pandemic (Covid-19). After passing screening, the ethics procedure for both giver and receiver could begin. Importantly, there was no compensation offered for gift-givers for taking part in this study, although recipients received their hybrid gift. The lack of incentives helped to ensure that genuine gift exchanges between two people were captured.

Table 1: Overview of participant relationships.

Participant ID	Gift-giver	Receiver
1A / 1B	Cousin	Cousin
2A / 2B	Friend	Friend
3A / 3B	Girlfriend	Boyfriend
4A / 4B	Friend	Friend
5A / 5B	Sister	Sister
6A / 6B	Friend	Friend
7A / 7B	Father	Daughter
8A / 8B	Wife	Husband
9A / 9B	Friend	Friend

An aim was to recruit a range of participants with varying relationships to each other, and adapted recruitment accordingly. Our main concern for recruitment was to focus on those familiar with

technology and those who needed or wanted to send a gift in the near future. Professions of participants ranged from speech and language therapist, personal trainer, truck driver, nursery school teacher, medical doctor, IT worker, and others including students and academics. Table 1 provides an overview of participants relationships to each other. Relationships were self-defined in each pair by asking participants questions such as: "who did you send the gift to? tell me about your relationship" or "who sent you the gift? describe your relationship with them". Most exchanges took place with gift-givers and recipients being located separately, with only one pair (8A/8B) being co-located.

3.3 Gift Creation

After screening and appropriate ethical consent had been completed, gift-givers were sent to a website that enabled them to create their gift. The website contained information such as a description of the finished gift that their recipients would receive. Respondents were asked to upload a photograph that would evoke nostalgic emotions for their receiver and instructions stated to think back to a shared past or memory. As per other studies that involve nostalgia evocation [59, 79], participants were provided with the following definition of nostalgia from the Cambridge Dictionary when uploading a photograph.: *"A feeling of pleasure and sometimes slight sadness at the same time as you think about things that happened in the past"* [57].

The overall focus for this work was on nostalgia, with the aim to understand if a hybrid gifting modality could transport both objects and emotions to uncover any associated impacts on gift-giver and recipient experiences. Within the following subsections we outline and justify the specific design decisions relating to the physical gift, media, and QR code usage that enabled this exploration.

3.3.1 Rationale for the physical gift: givers could select a flavour of chocolate ranging from dark, milk, or white. Chocolate is viewed as a conventional or typical gift [18], and we wanted to use a product that participants would be familiar with. As this work was exploratory, we purposefully kept the physical objects givers could select the same as we aimed to uncover the range of memories that were chosen to go with one example product. We recognise that a range of different products could have been used for this study. However as we were exploring a new gifting modality it was unclear how having multiple different types of products could impact the aim of uncovering nostalgic experiences of gift-giver and recipient. Therefore, the physical object was important to explore the role of products within hybrid exchanges, but also that it remained consistent to support wider study aims relating to nostalgia. The cost of the physical item was also a consideration, with the selected chocolates costing £6.00 for four chocolates which were packaged in a box, all of which were purchased from a small independent chocolate company.

Once the gift-giver had made their selections for the gift, the chocolate was then wrapped in tissue paper and a gift tag displaying a QR code was attached to the wrapping, all of which was completed by the researcher, the full package gift recipients received in the post can be viewed in Figure 2. As well as containing the chocolate package, we included a sheet of paper to remind participants to scan the QR code, but did not dictate any order for doing so, we

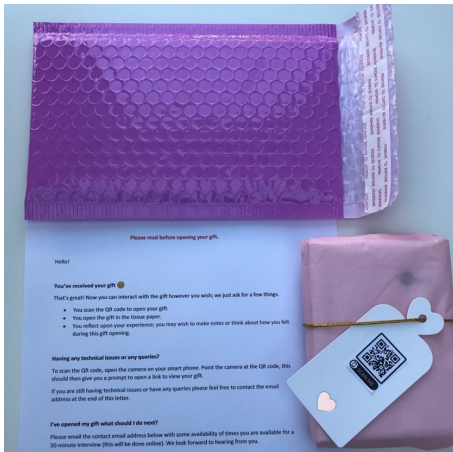


Figure 2: Gift package sent to recipients.

also stated a point of contact for any technical issues they may experience.

3.3.2 Rationale for QR code usage: this study used Quick Response (QR) codes to transfer text and images from gift-giver to recipient. A QR code is a square pattern that contains encoded information. They can transmit text, images, and website links. The QR code was printed and attached to a gift tag. Once the gift was received, recipients could then scan the QR code to reveal their gifted photograph before or after unwrapping the chocolate box. A mock-up example (this does not contain participant data) of a nostalgic digital layer can be seen in Figure 3.



Figure 3: Example nostalgic digital layer.

QR codes were chosen as an appropriate technology to access the digital layer due to their ubiquity, familiarity in daily lives, previous use with physical objects, and ease of use for participants. We did evaluate other technologies such as Radio Frequency Identification (RFID) tags, which unlike QR codes can easily be ‘hidden’ although we argue they could detract from the purpose of exploring nostalgic emotions. In brief, we recognise there are multiple technologies and ways in which the digital layer could be accessed, however this study was based around an event of a gift exchange in participants homes. Thus, we were cognizant of barriers and potential impacts of unconsidered uses of technologies. For example, if a participant had to download an application before ‘unwrapping’ their gift this may impact on the exchange and emotions felt, the familiarity of a QR code solved this issue.

3.3.3 Rationale for the media and digital layer: participants were asked to upload one image and had the choice to add an optional text message to accompany the photograph, which all nine givers decided to do. We did contemplate enabling participants to add videos or music to their gifts, but we wanted to retain focus on evoking nostalgic emotions. As the work is exploratory, it was unknown how having three or four types of media could impact on nostalgic experiences. Instead, we aimed to understand if a simple prototype using two familiar digital media types could be exchanged via hybrid gifting modality. We further recognised that most participants would have either physical or digital photographs and we wanted to capture where each participant searched for their media but also what type of memory they selected and why. We believed at this stage, adding multiple media types could add complexity to questions surrounding evoking nostalgia in hybrid exchanges. Further, we predominately wanted to contribute to conversations in new hybrid modalities as opposed to physical vs digital narratives.

3.4 Ethical Considerations

This study gained ethical approval from the University’s ethical review process. All personal data has been anonymized to protect participants from being identified. Appropriate information of the study and its purposes was provided to all participants, including the risks of potential upset caused via nostalgia.

3.5 Data Collection and Analysis

Once gifts were received and opened, interviews were arranged separately with each gift-giver and recipient, with all interviews taking part online due to Covid-19 lockdown measures. Interviewing each participant separately helped to mitigate against receivers only giving positive feedback [43] and contributed towards capturing authentic responses about the gift exchange. In total, eighteen interviews took place, with an average time of thirty-two minutes per participant.

Interviews were semi-structured [39] and explored the experiences of giver and recipient. Interview questions were informed by Kwon et al’s. five-stage gift exchange model [38], due to its previous use with both digital and physical gifts. Nostalgia was explored in the interviews by discussing any emotions felt during the exchange, with a focus on establishing emotions associated with both good and bad nostalgic experiences [32]. Further questions explored what participants reflected on, which helped to establish

associations with the characteristics of nostalgic experiences, for example, places, events, or objects [79]. In addition, respondents were asked about their proneness to nostalgia [64], i.e., ‘are you someone who often feels nostalgic’, which helped to explore any personality specific traits that could impact on the findings.

Following the completion of interviews, transcripts were thematically analysed. The analysis took an inductive approach and themes were generated from the data. Although no predetermined categories outlined the analysis, research questions such as “how can a hybrid gift help to facilitate nostalgic experiences?” and, “what are the implications of trying to evoke nostalgia through personal digital media for both gift-giver and receiver?” helped to shape the analysis direction. The process for completing the analysis followed Braun and Clarke’s [15] ‘phases of thematic analysis’, where initial codes were generated, grouped, and re-grouped to identify common themes. Initial coding of data was conducted by a single researcher. A further data session and discussion, involving all of the researchers in the analysis, enabled refinement of codes and themes. As per the approach of [16], we recognise the starting position of the sole researcher who conducted the coding. They are a person who sends and receives gifts, someone who is moderately prone to experiencing nostalgia, and enjoys interacting and using technology on a daily basis.

4 FINDINGS

This section presents themes generated from thematic analysis of interviews. Motivated by the intention to distinguish differing experiences or roles within hybrid gift exchanges, themes of recipient and giver are each presented in turn. We firstly outline three themes from gift-giver interviews, which relate to their experiences of creating, reflecting, and using a hybrid model to send a gift. Secondly, we then discuss three themes from recipient perspectives, including their experience on receiving the hybrid gift, types of reflection, and the impact of a hybrid model. Each theme contains relevant sub-themes to expand and elaborate on captured experiences. Table 2 details types of image and memories selected by gift-givers. Notably, only one participant (9A) decided to select an image with no people, and was solely of a meaningful place to both themselves and their recipient.

4.1 Perspective of the gift-giver

We present three themes generated from thematic analysis of gift-giver interview data, which detail viewpoints from givers on creating and reflecting on their experiences.

4.1.1 The process of creating a nostalgic digital layer.

Searching for a nostalgic memory: Most givers (1A, 2A, 3A, 4A, 5A, 6A, 9A) spent time searching for a nostalgic memory and viewed this process as a prolonged activity. Examples included, looking through social media or physical photo albums to find a compelling memory to gift. Participant 5A elaborates on searching for a photograph to gift to their sister, “[...] then I spent the rest of the day going through all the photographs that I hadn’t looked at for years, and I’ve actually brought some of the albums down.” A similar sentiment was echoed by giver 2A, “So I went through 10 years of photos all the way back to college and I watched us grow up together.” A few participants (7A, 8A) felt they had an obvious

choice of photograph, 8A explains: “I mean immediately, I knew which photograph to use ‘cause we’ve got one very classic wedding photograph [...]”. Similarly participant 7A explained they had many images to choose from but they instantly knew they wanted to use a holiday image from their daughters childhood.

Motivation of gift-givers: For the majority of givers (1A, 3A, 4A, 5A, 6A, 9A) there was no specific event for sending the gift, but they generally wanted to because they missed a shared past and wanted to surprise their recipient with a pleasant reminder. Gift-giver 1A explained how due to Covid-19 lockdown measures, they were unable to see their cousin and this was a way of conveying a shared past to show that they missed them via a gift. Further, 4A commented on their motivation for sending their selected memory, “For me I was thinking, let’s send a picture of happy times and also sort of a reflection on our friendship and the time that we spend together.” Participant 6A shared a similar viewpoint and discussed their motivation to remind their friend of a fond past time: “[...] I shared that with her and ‘cause I knew that she would remember and be like oh yeah, that was a great night.” Gift-givers 2A and 8A discussed how their motivation centred around specific occasions, with 2A selecting a birthday memory of their recipient as it had just passed. Whereas 8A selected a wedding memory due to it being close to their wedding anniversary.

4.1.2 Outcomes of creating a nostalgic digital layer.

Revisiting and sharing the past: Participants (1A, 4A, 5A) stated how creating the gift was a trigger to reflect and look back on the past with others. Giver 1A (who gifted to their cousin) voiced how they had shown their selected photograph to their mother, who was also in the image, which prompted a conversation about the Christmas memory. Giver 1A further added: “[...] it was something that I was even going to share on the family WhatsApp but then I wanted to wait until she [recipient] receives the gift rather than send it over the internet right away.” Participant 5A discussed a similar experience: “[...] But I’d also sent loads of the pictures that I’ve found in the loft. I took pictures of them and sent round all the family [...]”.

Further, participants (2A, 3A, 7A) mentioned the outcomes of sharing a memory with their recipient. Participant 2A discussed how they received emotional feedback regarding the nostalgic memory: “[...] she’s [recipient] not a very verbally emotional person and so when she messaged me she was quite emotional about it and said it was really nice and she really appreciated it, which was unusual for her.” Further, 7A mentioned they had received a text message about the gift from their recipient (daughter) but anticipated their next phone call so they would talk about it more. Other participants (1A, 9A) similarly discussed their anticipation on discussing the gift the next time they speak with their recipients.

Personal reflections whilst creating the gift: Five givers commented on experiencing both positive and negative emotions throughout the gifting process (1A, 2A, 3A, 6A, 9A), with all commenting on missing experiences and people due to the pandemic (Covid-19). Giver 1A expanded on the Christmas memory they selected to gift, and how it made them feel: “[...] I really miss that, and it was such a lovely time we’ve all had together.” Participant 2A shared a similar view: “[...] I miss going out with my friends, which is a thing of the current climate.” As well as reflections, 6A noted wanting to recreate memories from the past: “[...] we have a

Table 2: Images selected by gift-givers.

Participant ID	Image Description
1A	Family group at Christmas. Both participants and other family members present.
2A	A past birthday celebration of the recipient. Only the two participants present in the image.
3A	Image of both participants, outside a previous place of work for the giver.
4A	An image of a trip to horse racing, included both participants and other friends and family.
5A	Whole family photograph at another family members birthday party with both participants present.
6A	Image of a past night out, both participants in the image along with another friend.
7A	Holiday image, no giver present in the picture but recipient is with friends, family, and a pet dog.
8A	Image from the wedding day of the participants, only the two participants are in the image.
9A	Image of a holiday bar both participants like to go to, no people in the image.

really good time when we see each other so, you know we need to do this again, recreate this [laughs].” Whereas 7A reflected on mixed emotions regarding their daughter’s childhood: “[...]good feelings about that holiday specifically and sort of happy memories of their childhood”... “The sadness is for me is that their childhood flashed by so fast[...].” Participant 5A explained they find the past painful to look at and further commented on the bittersweet emotions they experienced: “[...] it was definitely pleasure at looking at the photographs once I’d finished crying and laughing.”

Participant 4A felt this was a positive experience, and discussed how they created the gift after they had a bad day at work, which in turn improved their mood, and added: “[...] kind of warm and secure in our friendship [...] and blessed in a way that we could draw on that particular experience.” Although this was not always the case, participant 8A highlighted a potential challenge of how nostalgia can vary from person-to-person which may make the nostalgic framing of these hybrid gifts difficult for some to create: “I don’t really think of my memories with [recipient] as nostalgia. [...] I think memories of people who have died more than anything or feelings of childhood.”

4.1.3 Digitally presenting a nostalgic memory.

Anticipation and reveal: As expected with gift exchanges participants often discussed a sense of anticipation they felt for their recipient to receive and unwrap the gift (1A, 2A, 3A, 4A, 5A, 8A, 9A). 1A adds: “I was thinking how will she [recipient] feel? You know whenever she receives this ’cause it was a good memory for both of us.” Participant 5A hoped their recipient would enjoy the nostalgic memory and also stated how the novelty of a hybrid gift contributed towards excitement of “having something just a bit different”. Participant 3A anticipated the whole gift being unwrapped due to the personalised element: “[...] I was not that excited about the chocolate itself. However, altogether with the message because it was personalised I was excited for him to open it.” Participant 9A was indifferent and felt equal excitement around both the memory and chocolates being unwrapped, and 8A generally was more excited about the chocolates being received as they knew their recipient would enjoy them.

Perceptions on hybridity: Givers mainly felt excitement and anticipation over the digital gift as opposed to the chocolates (1A, 2A, 3A, 4A, 5A, 6A, 7A), and often remarked how the nostalgic

digital layers elevated the chocolate and personalised the gift. Gift-giver 2A expands: “So I really like the idea of being able to give something fairly mundane, but make it personal.” Participant 4A shared a similar outlook: “[...] she really liked what I wrote more than anything and of course being reminded of that day. Turned out white chocolate wasn’t the favourite, but it didn’t matter.” Equally, participant 6A was unsure what flavour of chocolate to select, yet still felt able to create a thoughtful gift via the nostalgic media. Further, 5A discussed their views on the digital part of the gift: “[...] to have something personal added. I just think it shows a little bit more care and thought.” A different angle was offered by participant 8A, who elaborated on how they felt the chocolates were most important part of the gift. They went on to discuss how chocolates are a welcome gift within their household, perhaps alluding to considerations of familiarity, rituals, and subjectivity which can be present within hybrid exchanges.

Givers generally felt hybridity was important and sending both elements separately would have made the gift less special or thoughtful. Participants noted the combination of the chocolate with the digital layer (3A, 5A, 7A, 9A). Giver 3A commented: “Of course I could send it [image] like through a message [...], but it wouldn’t be that special [...] without the chocolates for example.” Whereas 7A leaned on the physical element to reinforce childhood memories of their daughter, picking milk chocolate as that was their favourite during childhood. Participant 5A elaborated on feedback they had received from their recipient, showing that both elements together had an impact: “She said she loved the photograph and she loved the sentiment. Yeah, she said the chocolates were yummy.” Participant 9A noted that they knew their recipient would like the chocolates, but the image and caption would bring amusement and meaning. Participant experiences demonstrate how both the physical and digital had their respective purposes within exchanges but also how the combination of objects contributed to meaning and thoughtfulness.

4.2 Perspective of the gift recipient

Within this second part of the findings, we present three themes based on analysis of gift recipient interviews, which include receiving a nostalgic digital layer, reflections on the past, and perspectives on hybridity.

4.2.1 Receiving a nostalgic digital layer.

Initial reactions: Most recipients (1B, 3B, 5B, 6B, 7B) were initially surprised by the image and noted the scanning of the QR code. Participant 7B expands: *"I think also a bit of a surprise 'cause I think I was kind of in a rush and when I opened it [QR code] and it just kind of made me slow down a little bit and yeah, got that nostalgic feeling."* A similar reaction was experienced by participant 4B: *"So I did scan the QR code which actually made me really smile and I said to my husband yesterday, that was the best part of the gift 'cause it had a picture of me and [gift-giver] [...]"* Participant 5B adds: *"[...] I hadn't anticipated at all was up on my iPhone pops this lovely message. I was just blown away [...]"* Although most participants viewed the QR code as a welcome addition, participant 8B provides an alternative view: *"[...] the QR code seemed like an unnecessary use of technology."* Participant 6B stated they viewed the QR code as a replacement for a card: *"I liked the fact that you don't have to mess about opening a card and that you would just click on this [QR code]"*

Emotions experienced: For many participants (1B, 2B, 3B, 5B, 6B, 7B, 9B) this was a predominately positive gift exchange, although elements of sadness and bittersweet feelings were evident throughout interviews. This is demonstrated by 2B who commented: *"I felt quite happy but like kind of slightly bittersweet, [...] Yeah, it was nice to have the message and be able to see us together like we used to be, but obviously it would be lovely to actually see her in person [...]"* Similarly, 1B commented: *"I felt very loved when I got the picture [...]"*, but later went on to state: *"So I felt happy but then it was sort of like a little bit of, not homesick, but a little bit of sadness."* This sentiment was shared by participant 6B: *"It made me smile and made me think well, I hope that can happen again sooner rather than later."* Further, participant 7B felt happiness in recalling a childhood holiday and associated bittersweet emotions, *"I think as we didn't have as many holidays with him [giver] compared to Mum."* Finally, recipient 3B was apart from their recipient and mentioned: *"To some extent it felt as if she [giver] was here."*

4.2.2 Reflections on the past.

Then and now, reflecting on the past and present: Participants stated how they experienced wider reflections upon viewing the nostalgic digital layer, often on prior lived experiences (1B, 2B, 3B, 4B, 5B, 6B, 7B, 9B). Four participants (1B, 3B, 4B, 5B) specifically made reference to pre-pandemic (Covid-19) times, and all described elements of longing for the past with a desire to recreate memories. Recipient 1B elaborated: *"[...] I was appreciative of getting to see some people over Christmas and then I sort of missed it, it made me nostalgic of older Christmases where we could just very freely go to one person's house and have like twenty people."* Participant 2B reflected more generally on the past by adding: *"[...] it was a different time and I guess it was a happy time and we weren't as busy as we are now."*

Two Participants (3B, 6B) reflected on the self during the exchange, with 6B commenting on their physical appearance and how that had changed over time. Further, 3B revealed: *"[...] Of course, that time was very different to now. [...] it was more than one year ago, and I have a very different life. So, in terms of... social life I was making other friends, [...] even the way that I was dressing [...]"*

Aside from self-reflections, participants (4B, 7B, 8B, 9B) experienced various thoughts on the past such as 7B reflecting on a family dog from childhood who has since passed away. Participants 4B

and 9B both reflected on a particular place or trip, with 4B adding: *"[...] memories of the horse racing trips that we've done, and that particular trip when we were together for two days."* Participant 8B reflected on their wedding day however stated that they don't long to go back to the day and are happy with it being a memory. The range of different reflections demonstrate how various memories can be presented through hybrid modality and the implications this has on reflective experiences of recipients.

Reflections on relationships and identity: All of the recipients discussed elements of a shared past, such as a wedding day (8B), family Christmas (1B), and holidays (7B, 8B). Part of this was representing or reaffirming identities or relationship meaning. One example, included recipient 4B assuming the gift may be related to horse racing, a shared hobby with their gift-giver. Similarly, participant 9B anticipated the image would relate to holiday memories, as both giver and receiver have been on many holidays together. In those cases when recipients correctly matched their assumption to the gift they had received, it demonstrated shared meaning and understanding of identities between giver and recipient.

Aside from identities, relationship meaning translated though the nostalgic content for recipients. Recipient 7B received an image from a childhood holiday with their father, and went on to state how special those memories are. The giver in the pair 7A (father) similarly stated the significance of those memories, meaning both giver and recipient confirmed their relationship meaning. Finally, participant 8B elaborated on how a shared past can be represented with ease but commented: *"[...] it's quite difficult to know for that other person what is truly nostalgic"*, which could be a challenge of framing hybrid exchanges around nostalgic emotions.

4.2.3 Perspectives on hybridity.

Value of the digital: Most recipients (1B, 2B, 3B, 4B, 5B, 7B, 9B) specifically mentioned feeling grateful because of the nostalgic digital layer, often noting the effort and time their giver had taken in selecting a memory. Participant 2B commented: *"I felt quite blessed to have somebody who would kind of in a sense take the time to do that [...]"* Equally, 5B shared: *"It's just one of gratitude and love towards my sister that she'd taken the time [...]"* Recipient 7B added: *"I felt quite grateful, like having family members in my life [...]"* Further, 3B commented: *"I really like what was written, I feel that in that it shows more effort to me"*. Finally, recipient 9B discussed their views on the effort behind personalisation, *"[...] instead of just buying something and putting in a packet and sending it, it shows thought, doesn't it?"*

Viewpoints on physical and digital: Recipients generally had mixed feelings on the value of both the physical and digital objects. Firstly, four participants (1B, 2B, 4B, 5B) highlighted a preference for the digital layer. Participant 1B discussed: *"[...] if they were to be sent separately, the photo would probably be more of a gift than the chocolates because I can go out and buy the chocolates myself [...]"* Despite there only being one choice of gift within this study, recipient 2B felt the chocolates could be changed for any product and elaborates: *"I think the digital side of it could go with any gift [...] the chocolate was in a sense a bonus."* Finally, participant 4B didn't like the flavour of chocolates selected however still felt the nostalgic memory afforded a valuable gift.

Other participants (3B, 6B, 7B, 9B), found the digital gift brought meaning to the physical, implying the hybrid form this gift took was important to them. Participant 3B was excited to eat the chocolates but the meaning and sentiment of the gift came from the nostalgic layer. Participant 6B adds: *"What I liked was I didn't know what was behind that QR code and if I had the photograph, it would almost take the surprise element out of it [...]."* Recipient 7B commented on the combination: *"[...] it's kind of quite nice to have something to hold [...] chocolates are kind of a gift in their own right [...] but it's kind of enhanced by having the photo [...] I just felt like maybe more effort has gone into it rather than just maybe someone picking up a WhatsApp message."* An alternative stance was articulated by participant 8B: *"[...] I suppose mixed feelings there, a lovely gift, but I didn't really see how the use of technology added to the experience."*

Lasting effects: Opinions on keeping the gift tag and QR code differed, some participants anticipated cherishing it as a memento, and others felt it was unnecessary to keep due to the QR code itself lacking any personal meaning. The majority of participants (1B, 2B, 4B, 5B, 7B, 9B) stated they would keep the gift tag with the QR code. Participant 5B elaborated on their plan for the tag: *"[...] put it in my art journal as a little memento."* Similarly recipient 7B had displayed their gift tag on a pinboard. Participant 2B commented generally on keeping the tag: *"[...] I think people would be able to just keep a hold of it and have a look at it every now and again."* Participant 9B added they were going to keep the gift tag but was unsure of where they would put it. Participant 3B stated they will take a screenshot of the digital content and may discard the tag.

Two participants (6B, 8B) stated they would not be keeping the gift tag, and both stated similar reasons for this decision. Recipient 6B remarked: *"Because it's a tag that says on it... 'QR code scan me' and that within itself doesn't really mean anything to me in terms of a visual. It's just a QR code."* This viewpoint is demonstrated further by 8B: *"There's no message on there to anything, so I can't see a purpose in keeping it in a memory box sort of thing."*

5 DISCUSSION

We set out to explore "how can a hybrid gift help to facilitate nostalgic experiences?" and, "what are the implications of trying to evoke nostalgia through personal digital media for both gift-giver and receiver?". Our findings demonstrate how nostalgic media can convey sentiment or motivation from giver to receiver, and the role of a physical objects in these exchanges. Further, our work highlights both the positive and negative psychological impacts of evoking nostalgia in hybrid gift exchanges. These findings inform the contributions of this work: (1) new knowledge on evoking nostalgia through repurposed media in a hybrid gift exchange from both giver and receiver viewpoints, and (2) an outline of specific roles involved in nostalgic hybrid gift exchanges and recommendations of design implications, challenges, and future research agenda.

This section discusses the associated roles and impacts within a hybrid exchange that involves nostalgia. The discussed roles are: gift-giver, receiver, media, nostalgia, and hybridity. Throughout the section we highlight challenges, benefits, evolving definitions, and design implications from the study.

5.1 Roles and impact of evoking nostalgia within a hybrid gift exchange

5.1.1 Gift-giver and receiver roles. We are able to distinguish clear roles of givers and recipients, to further reflect we converge these experiences together into four areas.

(1) **Reflection:** both giver and recipient had a reflective experience. Givers spent time searching for a nostalgic memory whilst simultaneously self-reflecting on their lived experiences, extending to reminiscing on people (family, friends), events (Christmas, holidays, birthdays), and places (beaches, bars, university), all of which are associated with nostalgic episodes [32, 79]. Similarly, recipients had their own reflective activity which was guided by gift-givers choice of media. For example, 1A and 1B both reflected on family at Christmas with each mentioning how they longed for those past times. Thus, both giver and recipient engaged in similar reflections at different stages in the exchange and in some cases together after the opening of the gift. Thus differing from Kwon et al's [38] five-stage gift exchange model where reflection tends to happen only at the time of opening.

(2) **Communication:** gifting is a proven method to communicate relationship status and meaning [8, 56, 63, 65], yet it's unclear if the same sentiment can be communicated via a digital media gift. In this study, we argue that givers leveraged both the physical and digital objects to communicate a message to their recipient. For example, 7A selected milk chocolate as they knew their recipient (daughter 7B) liked that flavour as a child. Further, they (7A) used a holiday image to convey to their recipient how valuable those memories are. This was clearly communicated to 7B who shared similar sentiments with their Father (7A) regarding those cherished times. Thus, a recipient role involved understanding the intended message behind both physical and digital objects. However, we note that a nostalgic hybrid gift is not for everyone, with findings indicating that the giver must be well-familiarised with the recipient to lean on an extensive and documented shared past.

(3) **Value alignment:** givers and recipients reflected more on the digital nostalgic memory as opposed to the chocolates, however, for differing reasons. On one hand, givers anticipated their recipient scanning the QR code to digitally unwrap their selected cherished memory. On the other hand, recipients reflected on the surprise when viewing the media and valued the time and effort givers had put into the gift. Thus, both felt the emotional value of the digital layer outweighed the commercial value of the chocolates.

(4) **An emotional exchange:** both givers and recipients felt this was an exchange of objects and emotions, thus aligning with social exchange theory [6, 19]. Givers viewed the exchange as an opportunity to remind their recipient of a positive past time in which they may long for. For example, 5A aimed to remind their recipient (sister) 5B of a pleasant family dinner, because to them it was a treasured and valued memory. This resulted in 5B mentioning how grateful they are for this reminder and expressed gratitude for their family. Further, as expected with nostalgia, a range of happy, sad, and bittersweet emotions were experienced [4, 32, 59, 79]. However, we note recipients explicitly mentioning they felt grateful for both their relationships and gift. In some cases, this gratitude leads to providing feedback, or anticipation of discussing the gift with the giver.

5.1.2 Media roles. When designing to evoke nostalgia, we found that using both images and notes together provided context to gift recipients. This combination enabled compelling recollections of giver and receiver shared memories, as well as providing insight into giver motivations and intent. The use of multiple media types to evoke nostalgia is mirrored in prior HCI [47, 50, 73], where a mixture of videos, music, news excerpts, and images are utilised. Overall, we acknowledge the importance of context for gift recipients, and the need to afford gift-givers with a platform to represent their nostalgic narrative through media. To summarise, from our findings we believe that the role of media enables gift-givers to tell a story and act as a high-fidelity memory cue for both givers and recipients.

5.1.3 The role of nostalgia. The first purpose of evoking nostalgic emotions within hybrid exchanges relates to a method of communication. Nostalgia is regarded as an established communication tool within marketing, which is often a way for brands to communicate messages to their consumers [41, 45, 67]. Similarly, HCI studies have found that nostalgia can be a tool to form connections with others by using popular media types of videos, music, and photographs [47, 73]. However, extant literature is devoid of capturing the gifting of autobiographical shared nostalgic memories in dyadic relationships. From our findings, we argue that hybrid gifting is a valuable modality to convey relationships, emotions, and personal nostalgia combined with a physical product.

The second impact nostalgia had on gift exchanges was the likelihood of the gift being well-received. Gifting literature has long debated what makes for a successful exchange [26, 27], and recently Branco-Illodo and Heath [14] called for an exploration of what a successful digital gift may involve. Although we did not set out to answer this question, our findings suggest that the effort, thought, and gratitude that can translate via nostalgic media could mitigate against identified shortcomings of digital gifts. Our findings demonstrate this point via participant 4B who received a flavour of chocolate that they didn't like but still felt this was a successful exchange because of the digital memory which was presented alongside. To summarise, the psychological benefits of nostalgia, the effort from gift-givers, and gratitude experienced by recipients paired with the welcome addition of chocolates increased the probability of a successful gift.

Thirdly, evoking nostalgia elicited psychological benefits in givers and receivers such as well-being, self-esteem, and enhancing the meaning of life [59, 79]. However, as expected with nostalgia [4, 32, 59, 79] there were also elements of bittersweet emotions including regret, sadness, and loss when participants viewed or selected a memory. As there were a wide range of emotions uncovered in this study, we reflectively question how to carefully design and facilitate subjective nostalgic experiences through technology when experiences can differ from person-to-person. Recent CHI work [42] has started to address this area in the recommender system space, however we encourage further exploration on specifically exchanging parts of our increasing bittersweet archives.

Lastly, we discuss the impact of nostalgia proneness within exchanges, which is a debated topic within consumer research and psychology, resulting in measures to quantify the emotions and define it as a 'personality trait' [4, 45, 53]. We found that digitally

presenting nostalgic memories does not eliminate existing debates. In fact, we found that participants had varying nostalgic experiences and our findings align with nostalgia being a subjective and personal set of emotions. Overall, when designing to evoke nostalgia in hybrid gifting, we recognise there is no standardised approach. Instead, we rely upon the gift-giver to deliver a considered message that is emotionally meaningful to them, in turn, promoting inalienable feelings and in some cases, evoking nostalgia in the gift recipient.

5.1.4 Role of hybridity. Both physical and digital objects have their respective purposes in hybrid gift exchanges. For example, the nostalgic digital media affords clear and compelling motivations that translate from gift-giver to their recipient, often by re-affirming relationship meaning and identities through digital means. Whilst prior work [7, 19, 56, 63] discusses how gifting is a way to convey to others how we perceive them, much of this previous work often focuses on physical objects, whereas we argue identities can be translated via digital as opposed to physical. This does not mean the physical object becomes redundant in hybrid exchanges, in fact our findings align with Koleva et al's [37] work which states how a combination of physical and digital goods can be elevated into memorable user experiences. From this study, we argue that had physical and digital objects been sent separately it would have impacted the experience of givers and recipients.

Further, Benford et al. [11] discussed the prospect of particular products benefiting from hybrid forms; according to our findings, the chocolates were elevated due to the nostalgic digital layer. However, we question the versatility of nostalgic digital layers with other products aside from chocolate. On one hand, we recognise that the chocolate example we have presented may not be applicable to all gift-giving scenarios or cultures. On the other hand, the findings of this study do highlight the emotional potential and possibilities of merging physical and digital objects within gift exchanges. Therefore in future, we propose that the type of physical object within nostalgic hybrid gifts should be a careful consideration, as it remains uncertain how a higher value, or tailored nostalgic physical object may impact on nostalgic experiences.

We recognise that digital gifts can struggle to convey sentiment or meaning [30, 38]. In our study, participants found the digital part more emotionally meaningful as opposed to the physical gift, yet the chocolates fulfilled the materialistic or commodity element, which are often expected within gift exchanges [27, 65]. Further, gifts promote a sense of ownership [8] and in this case, the chocolates provided the ownership via the physical object itself and as a vehicle to deliver the digital media. We note that a key part of a gift exchange is the surrounding social circumstances that can be elicited and maintained [8, 56, 63, 65]. Based on this study, we argue that the chocolates enabled participants to view the gift as a whole and as part of their social circumstance by promoting conversations with others.

In this study, participants accessed the nostalgic media via scanning a QR code, which are a ubiquitous method for business-to-consumer communication [61]. Speculatively, the routine uses of QR codes perhaps influenced findings, with few participants unwilling to keep the QR code, because as a stand-alone 'thing' a QR code was not valuable to them. On the other hand, recipients

viewed the scanning of the QR code as an unwrapping activity and felt surprised when they viewed the image and message, with one participant mentioning it felt like a replacement for a greetings card. This uncovered a design challenge of finding a balance between packaging, interaction, and personalisation. In brief, we propose a deeper understanding of creatively presenting and facilitating meaningful consumer-to-consumer communication, with a deliberate use of technology that does not detract from nostalgic experiences.

To summarise, at the beginning of this work we defined nostalgic hybrid gifts as a gift that intends to create nostalgic emotional experiences. Learning from participant experiences we expand on the definition as: *a modality of gifting which enables the transfer of shared memories, relationships, gratitude, and a physical object which results in emotional bittersweet recall for both giver and receiver*. We anticipate that these findings could be used in similar technology mediated reflection studies, as considerations or potential impacts of evoking nostalgia through digital media.

6 LIMITATIONS

This work serves as an introduction to nostalgic hybrid gifts. We recognise the need for further steps to fully explore the concept from multiple perspectives. In our study, we took an "in the world" approach [22, 58, 71], however we did not include a range of stakeholders. Perhaps a participatory method [70] to include a range of consumers and brands would uncover commercial stance and opinion.

Further, we reflect on two elements which could have potentially impacted on nostalgic experiences. Firstly, we recognise that the Covid-19 pandemic could have influenced how nostalgic participants felt, yet it's unclear the extent in which this may impact findings. Secondly, despite chocolates being a suitable common gift for exploring nostalgic hybrid gifts, we question the impact on nostalgic experiences had gift-givers been provided with the choice to select an object of their preference.

7 CONCLUSIONS AND FUTURE WORK

In this work we have introduced the concept of pairing our digital memories with a physical chocolate box to create nostalgic hybrid gifts. Through a simple prototype, we set out to explore if a hybrid gift could facilitate a nostalgic experience and the impact on both gift-givers and recipients. We found that multiple factors can influence evoking nostalgia including proneness of participants, subjectivity, and external factors, such as the Covid-19 pandemic.

To summarise our key points, we believe each component within a hybrid gift exchange serves a specific role and purpose. This includes roles of the gift-giver, recipient, nostalgia, physical objects (chocolates), and digital objects (image, text). When designing new gifting modalities or hybrid experiences researchers should be cognizant of these roles and the nuances of each. We highlight associated design challenges of balancing packaging, interaction, personalisation, and emotions. Additionally, we contribute to discourse relating to the benefits and possibilities of merging physical and digital objects to craft new experiences as opposed to comparative narratives, as well as providing an appropriate definition of nostalgic hybrid gifts based on our findings. Our contributions of

this work are: (1) new knowledge on evoking nostalgia through repurposed media in a hybrid gift exchange from both giver and receiver viewpoints, and (2) an outline of specific roles involved in nostalgic hybrid gift exchanges and recommendations of design implications, challenges, and research agenda.

In future, we suggest that researchers could address variations of nostalgic hybrid gifts. Such as creating higher fidelity prototypes or changing components like the type of physical object. This may uncover new impacts on nostalgic experiences of gift-giver and recipient, whilst also contributing to better understanding of how a hybrid modality may mediate gifting social practices or rituals. In future, giving participants the freedom to select a physical gift of their choosing could help to inform this area. We also suggest, more broadly exploring technology-mediated nostalgia within hybrid experiences due to this work uncovering general roles of using physical and digital to deliver compelling nostalgic narratives within interpersonal relationships. All of which could be transferable to different types of hybrid gifts or extend to studies beyond gifting. Through our hybrid gift design and findings, we hope the study provides direction for future work in new gifting modalities or studies underpinned by nostalgic emotions.

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