

Home Curation versus Teenage Photography: Photo Displays in the Family Home

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ABSTRACT

In this paper we report a new empirical study of the photographic portrayal of family members at home. Adopting a social psychological approach and focusing on intergenerational power dynamics at home, our research explores the use of domestic photo displays in family representation. Mother-teen pairs from eight families in the south of England were interviewed at home about their interpretations of both hidden and displayed photos within the home. Discussions centred on particular photographs found by the participants to portray self and family in different ways. The findings show that public displays of digital photos are still *curated* by mothers of the households, but with more difficulty and less control than with analogue photos. In addition, teenagers both contributed and complied with this curation within the home, whilst at the same time developing additional unsupervised ways of presenting their families and themselves on-line. This implies the need for better digital tools for *shared photo curation*, and parental monitoring software for *outgoing Internet content*.

1. INTRODUCTION

1.1. Background & Motivation

In recent years, HCI researchers have given considerable attention to digital photographic practice as a central feature of contemporary home life in Anglo-American societies (Crabtree et al., 2004, Frohlich et al., 2002, Kirk et al., 2006). This attention has been motivated, in part, by a paradigmatic shift in the HCI field to develop more socially informed understandings of computing's role in the domestic domain (Crabtree and Rodden, 2003, Taylor and Swan, 2005) and, in part, by the mass-market uptake of digital photography (Chute, 2003) along with the proliferation of digital capture devices and photo-management tools for the desktop computer (Frohlich et al, 2002). Approaching the study of domestic photography from a social psychological point of view raises the issue of how different members of a family are adapting to new digital technology and the effects of that adaptation on family life. We take up this approach here by looking specifically at what has been called the 'apparent democratisation' of family photography by Shove et al (2007). This refers to the possession of digital cameras and camera-phones by more and younger members of the household, and increasing access to downstream tools and services for photo manipulation and sharing (i.e. 'photoware', after Frohlich et al 2002). In this context, we have been concerned to understand the ways in which traditional practices of personal and family representation are changing with the digitisation of family photography, and whether or not they are becoming more democratic.

For the purposes of this discussion, we define family photography within the 'home-mode of communication' that Richard Chalfen has previously outlined (1987). Within the conventions of home-mode, the tools and practices of family photography have been more accessible to adults than their children and the mother of the household has assumed the role of 'family chronicler', responsible for creating and documenting representations of the household-at-large (Chalfen, 1987, Rose, 2003). However, digitisation has signalled photography's accessibility to the younger generations of the household. Developments in digital camera technology have coincided with development and proliferation of networked personal mobile devices, leading to the availability of photographic tools, primarily camera-phones, to juniors and especially older teenagers (Kindberg et al., 2005). This is coupled with developments in Internet technology, promoting use of online photo sharing applications on social networking sites. With resources to-hand to generate and distribute photographic content, younger household members now have the potential to contribute to the making of familial representations. The question is, are they doing this and how do their representations interact with those of their mothers who have traditionally been responsible for photo archiving and display within the family? We address this question by looking at the photographic presentation of self and family at home, from an intergenerational perspective. This constitutes a long term, asynchronous form of collocated social practice around photographs, which has implications for the design of an emerging class of electronic photo displays for the home and their related technologies and services.

There appears to be a gap in the literature concerning how photographic representations of family are created in a contemporary household that is 'going digital' (Shove et al., 2007). The integration of digital photography with 'home mode' conventions of representing family is a subject that remains relatively underexplored in HCI. Also underexplored is the intergenerational perspective on this integration: how the tools and practices of photography's 'new recruits' (ibid.) are integrated with home mode. To date, HCI research on teenage photography has centred around teen uses of new digital tools, such as mobile and online photo-sharing applications, and the home setting has been somewhat overlooked as a site for teenage expression. Mobile digital devices afford photo-mediated communications between teens and parents in and beyond the home, but the meaning of 'family' and 'home' in these communications remains relatively unmapped.

Some theoretical studies have speculated on the changing role of photography in family representation, suggesting that teen participation combined with digitisation marks the individualisation of practice and the eclipse of family photography by personal photography (Van Dijck 2008). For teens, digital photography is, in most cases, their first experience of photography, whereas, for their parents, the transition from film to digital is a process of adaptation and revision (Shove et al., 2007). Hence, the take-up of digital by adult household members is arguably less straightforward and more incremental than it is for their juniors. This raises questions concerning the distribution of technical expertise across generations within the household, which could, in turn, have implications for the role of the family-chronicler as creator and manager of family representations, as well as, more abstractly, the function of *family* in contemporary photographic practice. Indeed it is seemingly teen practices, rather than home mode practices, that are driving technological innovation in current consumer markets (Schiano et al., 2002).

With the exception of the last point, these speculations on the state of contemporary family photography are lacking in empirical foundation. We have attempted to shed some light on the subject in our own empirical work by inviting an intergenerational perspective on the meanings that domestic photo displays hold for parents and teenagers. Our findings underpin this discussion. The aim of this paper is twofold. Firstly, we present and discuss empirical materials from a field study exploring the photographic presentation of self and family in family homes and, specifically, within the context of parent and teenager relationships. By looking at both film-based and digital photography, from an intergenerational perspective, we hope to provide insight on how digitisation and democratisation is currently being taken up within family households. Secondly, based on this insight, we identify some issues for designers of domestic photo displays and photoware to consider, in the case of families with parents and older teenagers living together at home.

2. RELATED WORK

We now consider some insights from the literature on photo displays in the family home, giving particular emphasis to their role in family representation.

2.1 The reproduction of convention

Chalfen (1987) acknowledges the central role that photography plays in family representation, observing how familial conventions are reproduced through photography's tools and practices. Rose (2003) has explored this further in relation to motherhood. More recently, Drazin and Frohlich (2007) have shown how the specific presentational forms of traditional paper displays in the home are arranged to communicate domestic roles, relationships and obligations and can attribute salience to particular representations over others.

Historically, photos have been experienced in the home as both images and objects, as framed prints, album collections, or keepsakes. Edwards argues that the material qualities of the 'photo-as-object' have been largely overlooked in social studies of photography and stresses that it is precisely this materiality – a photo's presentational forms - that render it a "socially salient object" (1999: 222). This is largely because people bring cultural expectations to the affordances of prints and their use as expressive resources. The inert quality of the printed image lends itself to the perpetuation of representations; a photo can be used to preserve identity or construct a past or a future as 'a desire for memory' in Edwards' view. This idea can be related to the notion of a stereotypical family portrait. In sum, the form by which a photo is presented is integral to the construction of meaning around it.

From the literature that follows photography's digitisation, it seems that the handling of photos is largely carried out in the digital realm and doesn't draw upon the ambient home environs in ways just described. Digital photos are largely managed and displayed temporarily on the desktop (Kirk et al., 2006) or the TV (Lindley and Monk, 2008), distributed for online display (Miller and Edwards, 2007) and stored digitally (Kirk et al., 2006). Traditional forms of display can retain their character to an extent, because digital photos can be printed and handled like the artefacts of film photography (ibid.). To date there is no reported use in the literature of commercial digital photo frames for coordinating home displays, nor have there been any empirical studies specifically investigating their use in family interaction. A number of HCI studies that have prototyped digital display devices are either presented in the context of ongoing ideation activities rather than actual use (Kim and Zimmerman, 2006a, 2006b, Swan and Taylor, 2008, Durrant et al., 2008), or are not concerned with *collocated* family

interaction (Mynatt et al., 2001). Therefore it is hard to ascertain how the practices that shape traditional home display might be integrated with digital photography.

By exception, findings from a recent empirical field study by Shove et al. (2007) observes the incremental nature of 'going digital' and the persistence of conventional practices in the face of new tools and new, younger recruits. The authors observe photography's 'apparent democratisation', laying the groundwork for this discussion. However they do not describe the nature of this democratisation, nor expand upon its implications for family photography.

2.2 Embodied Interaction and coordinate displays

The handling of the photo-as-object can be related to a methodological framework within HCI that conceptualises our interactions with technology in phenomenological terms. This 'embodied interactional' approach (Dourish, 2001) attends to people's embodied experience of technologies in everyday interaction, enabling the HCI researcher to attend to the materiality of digital artefacts by acknowledging the distributed, ecological and inherently social nature of technology use.

Crabtree et al have drawn upon this framework in their ethnographic studies of home life (Crabtree et al., 2003, Crabtree and Rodden, 2004, Crabtree et al., 2004). Their work forms part of an endeavour within HCI to design domestic technology that fits into the organisational systems by which a household is distinguished and is therefore of relevance to this discussion. Through this lens, 'acts of display' are socially constructed by household members in their routine interactions with material technologies available in the home and they serve particular ends. Observing the activities of distributing paper mail (Crabtree et al., 2003) and sharing printed photos (Crabtree et al., 2004) at home, the authors identify networks of 'coordinate displays' or the coordination of activity across distributed 'sites', emphasising ways in which displays afford collaboration between members. By making visible the affordances of paper for the coordination of meaningful action, the authors problematise the "monolithic" form of the desktop computer and offer design recommendations for home computing based on the need to make technology not only configurable but also distributable in such way that it can support meaningful, creative expression between household members. These ideas are supported by Taylor and Swan (2005) in their parallel studies of organisational systems in the home.

Echoing Edwards, Crabtree et al. (2004) make a case for 'the embodied interactional ways' that people present printed photos when collocated and the significance of prints' 'tangibility' and 'manipulability' for inter-personal communication. In addition, they observe challenges presented by these qualities for digital photo sharing, particularly when computer-mediated. The authors are not concerned with home display nor family representation per se, and do not study the presentational forms that are attributed to a home's more permanent and ambient displays. Nevertheless, from their embodied interactional perspective, they identify three 'essential components' to photographic expression in a collocated group that we believe can be usefully taken forward with regards to home display: photos are organised for *readiness-to-hand*; photos' physical properties are manipulated for distribution; and a narrative account (photo-talk) is produced that attributes photos to-hand a particular meaning.

2.3 Situated displays and domestic order

Though not related to photography per se, insights from a more recent study on situated displays reveal how the domestic order within a family home can determine who is able display what, when and where: "we have seen that, in some families, finding a place for expression turns out to be difficult" (Sellen et al., 2006: 391). Exploring person-to-place communication, the Homenote project investigates the enabling of a *specific site* for the display of digital media and, through the deployment of a novel prototype serves to demonstrate that, because different power dynamics are enforced within different families, the perceived ability to express oneself in a certain place is seen to depend, not on the display technology available to-hand in material terms, but ultimately on the domestic order established within the household and the control this order affords to its members.

This sense of members' entitlement to a display site is observable from Homenote's unique configuration. But it is less apparent in existing technology configurations. Kirk et al (2006) have shown how photoware on the 'monolithic' desktop computer enables increased individual control over the handling of digital photos and the presentational forms they may take. As such, it affords "a shift in the balance of power" (2006: 763) whereby an individual potentially has all the necessary resources to-hand to prepare photos for display without the need for collaboration. The authors conjecture that, as a result of this individualisation, personal photo-management practices are to become problematic for shared collections, such as family collections, kept on the desktop. As this 'photowork' is largely carried out in the digital realm, it doesn't draw upon the physical, ecological habitat of the home in ways seen to be crucial for making display activities visible to other household members (Crabtree et al., 2003, Crabtree and Rodden, 2004, Crabtree et al., 2004).

As a final point, although HCI has given attention to teen media practices and identity (e.g. Grinter et al., 2005), which can refer to photos (e.g. Shiano et al., 2002), there are no studies that explore how these practices mediate intergenerational relations and domestic displays. A recent paper by Taylor et al. (2007) discussing collaborative aspects to making photo

displays in family homes is a valuable accompaniment to this paper and includes data from the study we present below. However the paper is not centrally concerned with the democratisation of family photography and doesn't embrace intergenerational perspectives. A study of family interaction surrounding the home computer and the Internet produces insights about technology, domestic space and parent-child power dynamics, but not in relation to photos (Frohlich and Kraut, 2003). Findings from a more recent study of a related subject introduce the notion of the teen-as-technical-expert in the family household (Mesch, 2006). Here, Mesch has found that teenagers use computing expertise to challenge parental authority and create intergenerational conflict. Remaining under-explored is the mediation of photo displays in these dynamics.

3. EMPIRICAL STUDY DESIGN

3.1 Approach

We adopt an embodied interactional approach to our own social psychological research on photographic representation in family homes (Dourish, 2001). We also draw upon another analytic framework, Bakhtinian dialogism, for our intergenerational perspective on the subject (Bakhtin, 1981). Dialogism is aligned with phenomenological approaches and conceptualises self-representation in the context of dialogical relationships with others. A central tenet is that dialogue with others is central to the formation, growth and expression of identity. This framework is therefore deemed useful for exploring family interaction around domestic photo displays. Also, McCarthy and Wright (2004) have effectively demonstrated the usefulness of dialogism to the HCI field for understanding self-other relations in user experience.

Drawing from embodied interaction and dialogism we have devised a field study that attends to the act of portraying self and family at home. Our study is designed to feature sense-making activities around photos and their display. By observing the ways in which family members present their photos in the home, we are particularly interested in the interplay between the personal expressions afforded by photographic technologies versus that afforded by the domestic order in the household. For our purposes here, 'family' and 'household' are interchangeable terms. Also, we conceptualise 'photo display' as a socially contextualised activity. This means that, for all intents and purposes, photo sharing and 'photo-talk' (Frohlich et al., 2002, Crabtree et al. 2004) are considered acts of display alongside the ambient presentation of material arrangements, such as framed prints.

3.2 Method

3.2.1 Sample

During 2006 and 2007 we approached eight family homes across different towns in the south of England, of mixed ethnicity (because one mother is Chinese), using a Snowballing technique for recruitment. In each household we engaged a teenager aged between 16 to 17 and their parent, recruiting different dyadic combinations of fathers, mothers, daughters and sons. We approached older teenagers due to ethical constraints for conducting aspects of our research with teenagers independently of their parents. However, other household members involved themselves in some aspects of the fieldwork. The sample reflected our focus upon intergenerational relations, as opposed to those relating to gender, or other individual differences. Table 1 shows details of households that are relevant to this discussion.

Details of Households including digital camera and camera-phone ownership. Participants are attributed pseudonyms.					
Participant: Parent (P) / Teen (T)	Household	Household Members (P) / (T) / Junior (J)	Digital Camera Yes (Y) / No (N)	Camera-phone (Y) / (N)	Personal Computer (Y) / (N)
Yvonne (P)	1	2 (P) & 2 (T)	Y	Y	N
Cat (T)			N	Y	N
Sue (P)	2	2 (P) & 3 (T)	Y	N	N
Michelle (T)			N	Y	Y
Jenny (P)	3	2 (P) & 2 (T)	Y	N	N
Adam (T)			N	N	N
Lara (P)	4	2 (P) & 1 (T) & 1 (J)	Y	Y	Y
Caroline (T)			Y	Y	Y
Rosemary (P)	5	2 (P) & 1 (T)	Y	N	N
Kate (T)			N	Y	N
Eric (P)	6	2 (P) & 2 (T)	N	N	N

Emma (T)			N	Y	N
Kath (P)	7	2 (P) & 2 (T)	Y	N	N
Michael (T)			Y	Y	N
Hisako	8	2 (P) & 2 (T)	Y	N	Y
Julie			N	Y	N

Table 1. Details of participating households including camera and camera-phone ownership

As Table 1 illustrates, all participants have made the transition to digital camera use, although only two of the eight teens we interview have their own digital camera and all of them have camera-phones. We can add that parents in all households also own at least one film camera between them, although use of it is not referenced in the data that is subsequently collected. All households own a ‘family computer’ and, in two households the participating teen owns a personal laptop as well. None of the households use a digital photo frame or similar class of display device at home.

3.2.2 Creative Interventions

In keeping with our social psychological approach, we wanted to engage research participants in sense making and reflection around their photo displays in the field. We employed the ‘tactical’ use of ambiguity (Sengers and Gaver, 2006) to do this, alongside ‘reflective’ HCI research strategies that harness personal creativity (Sengers et al., 2005). The rationale behind our study design was to create a context for discussion that has two strands: first, enabling parents and teens to talk, individually and together, about the meanings they attach to photos for self and family expression; and, secondly, enabling talk around photo display practices and artefacts at home.

In order to pursue this dual objective we devised a set of printed task cards, each task requiring participants to ascribe a particular meaning to a particular photo display in their home, in their own time, and in relation to home displays in general. Twelve tasks were articulated in such a way as to afford subjective interpretation by participants when deployed. In order to address the politics of display, tasks aimed to provoke reflection on both positive and negative features of photographic representation. Examples include: ‘Show me a photo that inspires you’; ‘Show me a photo that makes you feel uncomfortable’; ‘Show me a photo in which you look photogenic’; ‘Show me a photo that you like but would never display’; ‘Show me a photo that is provocative’; ‘Show me a photo that represents your ideal portrayal of family’; ‘Show me a photo that makes you feel anger towards your family’; ‘Show me your favourite home display’. Essentially, the tasks were intended to serve as a means to catalyse self and family presentations to the researcher at interview.

We also invited participants to use disposable cameras take photos of their photo displays in response to tasks. Although we could take our own photos during our visits, we felt that this additional request might help them frame their personal reflection on the tasks at-hand in the absence of the researcher. Task responses were to then facilitate a semi-structured interview with *each* participant (Part Two) during a subsequent visit to each home by the researcher. This was to be followed by a discussion with the parent-teen dyad in each household (Part Three) about the task responses they give consent to share. Both interview designs draw upon task responses, but questions for Part Two focus on self-representation in the familial context and for Part Three focus on family interaction with photos, raising issues of collective representation, photo ownership and intergenerational contention. The overall aim for data collection was to generate individual and dyadic accounts of the sense making surrounding domestic photo display and family representation.

3.3 Procedure

On the first household visit, we gave a set of task cards to both participants in each household, to respond to in their own time within a 28-day timeframe. On this initial visit we observed that ‘family computers’ were all permanently located in a communal space in the home.

[Insert Figure 1 here.]

Figure 1. Task cards in use at interview with corresponding photos; and exposures from disposable camera use capturing display forms in situ.

We revisited the households when they were ready to discuss their individual responses. At interview, we focused on participants’ construction of meaning around photos. It’s important to note here that our concern was to invite dialogue, not around task responses per se, but around the ‘embodied interactional’ ways in which photos were drawn upon in responses to afford various presentations of self and family to the researcher. Towards this end, many responses involved participants selecting printed photos from drawers or folders and presenting them in-hand round a table. Others involved them pointing to arrangements in various sites in their home. In Part Two, following the initial presentation of responses, the researcher asked additional questions that invited participants to: (i) categorise task responses into self-versus family representations; (ii)

construct a narrative account of sense-making around their categorisations; (iii) consider constraining and enabling features of display technologies to-hand; and (iv) what forms of display their representations would 'ideally' take. In Part Three, dyads presented task responses to each other for discussion, after which the researcher invited them to further categorise their responses, collaboratively, for including in or excluding from a shared portrayal of their family.

Audio recordings were made of each interview for subsequent transcription. The researcher processed disposable camera exposures after the interviews.

3.4 Interpretative Analysis

We subjected our data to a form of Interpretative Phenomenological Analysis (IPA), drawing upon an analytic tool through which we could hermeneutically engage with each participant's individual account of their sense making activities as presented to us within the research context (Lyons and Coyle 2007), as well as dyadic accounts of sense-making around family interaction. Interview transcripts from Part Two were systematically coded for themes relating to intergenerational presentations of self and family, in individual accounts and then across accounts. Initial themes were then clustered into a hierarchical structure of salience constituting major themes and sub-themes. Wherever possible we used participants' language rather than relating that of theoretical constructs. Transcripts from Part Three were coded in a similar fashion, although this time focussing on individual sense making in the context of self-other relations. We drew upon Bakhtinian dialogism to achieve this, as IPA is not ordinarily conducted on dyadic transcripts.

4. EMPIRICAL FINDINGS

4.1 Terminology

Empirical materials will be presented in terms of themes and sub-themes, including phenomena observed across all participating households. We draw upon examples from four households to illustrate our themes, using other participants' accounts to support our persuasions. Note our use of the following terms: 'home' refers to the physical domestic space; whilst 'household' refers to the family members that dwell in the home; photo display 'beyond the household' refers to acts of display made visible to visitors to the home. So, when referring to a display 'within' or 'beyond a household', we mean actions *made visible* to household's members rather than any spatial relation to the home's physical environs. Adopting these terms, we re-enforce our analytic concerns: how are photographic technologies available in the *home* drawn upon to express family relationships in the *household*?

4.2 Home Curation

A central phenomenon that emerged from the data is what we refer to as *home curation*, a term used by a participant at interview and defined here as the means by which photographic representations of individual household members are coordinated - or 'curated' - across the home environs to portray the household-at-large. This is also a means by which the household establishes its inter-relations, in a reflexive sense and for its collective presentation to others beyond the household. We find home curation to be aligned with the conventions of 'home mode' and the tradition of the mother as family chronicler. In keeping with this, the mother holds the role of home curator in all of our households. We find curatorial control and the presentation of home to be closely bound to maternal control and other domestic roles tied to reproducing a household's moral and social order. Note, we do not make general claims here about definitive roles associated with motherhood, rather, we report what has been made visible within the households we approached. Indeed, the only father taking part in our study pointed out that his wife is the family photographer, suggesting that she might have been a more appropriate participant for the study than him: "she should be doing this, actually!".

4.2.1 Unifying an image of family

A feature of the curatorial role is that it affords a dominant *voice* to the mother for representing household members at home. The curator has a notion of how they want to portray their family within the home and the placement of photos is seen to be carefully coordinated throughout the domestic space to present a unified image of the household. To provide an example of this, we introduce Yvonne, who lives with her husband and two teenage daughters. As with most of our households, Yvonne's portrayal of her family is concerned with the notion of 'inclusiveness' via the equal representation of household members. She describes how photos are drawn upon to achieve this, in particular via the distribution of framed photographic prints across display sites in the home. These prints are a mixture of prints from film and prints from digital files. Her framing activities are seen as something of a visual balancing act concerning who is captured in a given photo. Yvonne describes how, when cropping a photo during framing activities, she endeavours to 'level the balance': "I think, "Okay, I've chosen that one, but there are other gorgeous ones of her".

This notion of inclusiveness also relates to how Yvonne represents herself as part of her family. Consider the following excerpt in which Yvonne describes the display of a photographic print propped up in the kitchen, which captures her with her other household members at a wedding.

On the whole, there aren't many photos of me. I take the photos, so it's quite hard to find one that I really like of me. I mean there are a number of photos of me displayed around the house, probably correct percentage amount per person per family, but that's because if there's a good photo of me I tend to put it up. I'm vain, you know? I like nice photos of me! [Laughs.] Makes me feel good! So, the fact that there are, you know, four photos of me in the house or something doesn't represent that there's as many photos taken because, you know, I think we'll go on holiday and they'll generally be three of me taken, perhaps, and 500 of everybody else - and that's not an over-exaggeration.

In this excerpt we see how curatorial action is taken to equally represent all household members.

Also in this excerpt, Yvonne makes explicit the way in which curatorial action supports her own self-expression. Managing photo displays facilitates her own 'photogenic' portrayal and, in reference to this wedding photo she adds: "it was nice being part of the family, it was a nice occasion and I like dressing up". We see how Yvonne's self-presentation is closely bound to that of her household-at-large and curatorial interests align with her own. These can conflict with other members' interests, though. Yvonne confesses that her teenagers dislike this particular display and how they are individually portrayed. In fact, during our visit, Yvonne's daughter, Cat, explicitly expresses her dislike for it, making complaints about the photo's content and its prominent placement. Note Yvonne's curatorial defence in the excerpt above: she feels that, in comparison to other members, she has limited resources for portraying herself as she wants to be seen, hence this photo's ongoing display. Yvonne presents a paradox here: on the one hand, there are numerous photos of other members in the family collection, affording a broad set of expressive resources by which they may be represented; on the other, Yvonne curates the display of these photos, limiting their availability to other members as resources for *their own* self-expression.

[Insert Figure 2 here.]

Figure 2. Digital photos printed on bathroom tiles.

We see this played out in another display site in Yvonne's home, the family bathroom, where digital photos of each family member have been printed on individual tiles (Figure 2). Again this display is intended to promote a notion of inclusiveness. One tile is found to be particularly salient and is positioned centrally in the physical environs. It shows Cat, posing in a lavender field for Yvonne, who captured the photo. Through this display, Yvonne is celebrating her daughter and her personal achievement as a mother: "I'm just showing off my exquisite child". Moreover, she considers herself an amateur photographer, so she is also promoting her photographic achievements: she exclaims: "it just worked well, so I was proud"; and describes how this photo appeals to her "vanity as a photographer". The photo empowers Yvonne's self-image, although Cat's own feelings towards it differ: "I don't know why everyone likes that photo - I really don't". Cat then qualifies her statement: "Well, I don't not like it, it's just that everyone places too much importance on it". The photo's display gives emphasis to a particular portrayal of Cat that she feels resigned to accept: "I've got no choice... but that's cool"; curatorial control is enforced and the image of Cat is, literally, embedded in the bathroom through the material properties by which it is constructed.

The material properties of the tile display are seen to enforce the curatorial story surrounding the capture event, over any alternative story. Yvonne's account reflects a particular dimension of a mother-daughter relationship: the daughter obliges to pose for her mother; parental respect is observed. Cat offers an alternative story about the capture event to the researcher: "what you can't see in the photo is that I'm actually wearing a blood-stained t-shirt that Maman (Mum) loathes". In an ambient sense, though, Cat's account is 'quieter' than the curatorial narrative, because the 'blood stained t-shirt' is not visible in the image; rather the 'pose' is communicated.

What is significant about this example for the purposes of our discussion is that Cat's self-expression is constrained by the curator's control over display sites that are salient in the home, including communal spaces that all the household and its visitors occupy, such as the kitchen, or bathroom – something Yvonne points out herself. Display sites for junior members' own expression are visibly contained and outside communal spaces. We see this in teenager's bedrooms, where photo collages are bounded by door-frames or pin-board surfaces and consequentially lack salience within or beyond the household. Yvonne justifies her right to display sites in the kitchen because she considers this space, within her domestic roles, to be her "domain", denoting how curatorial allocation of sites is tied to the household's social organisation.

Through these examples, we come to understand how Yvonne curates a representation of her family that communicates inclusiveness and equality of expression and has a unifying effect. This image is curatorially constructed through photo displays and accompanying narrative accounts. It is also worth noting at this point that curated content consistently perpetuates home mode conventions of familial integration (Chalfen 1987, Rose 2003).

We also observe that the actual handling of photos in the construction of curated displays is not so 'democratic' in nature. On the contrary, it is carefully controlled by, for example, Yvonne whilst conflicting with, for instance, her daughter's personal interests. This reflects the nature of the power relations between Yvonne and her children: "they can develop and be their own creatures, but they're still my babies, so tough!". These power relations aren't necessarily apparent to those beyond the

household because displays express inclusiveness, but they certainly are made demonstrable to household members by the nature of displays' construction. Curatorial control is materially enforced, and 'cemented' in the case of the tile display.

We also see that the curatorial narrative, or 'voice', can influence teenagers' own use of photos in representation. This reflects intergenerational dynamics relating to parental respect. In another household, Sue, a mother of four, curates a family portrayal that features her household's past experience living in Africa. This representation is characterised by the family's identification with African culture combined with nostalgia. Sue constructs this image by intermingling African memorabilia with framed photos: "the children are amongst, you know, basically things that I've brought back from Africa; and they were born in Africa". Note that the specific placement of a framed print is central to her expression. Sue's teenage daughter Michelle echoes the nature of her mother's arrangements: by placing a Zimbabwean flag in the centre of a photo collage in her bedroom, Michelle also represents the central significance of her African identity. We also observe the influence of the curatorial voice when she is joined by her mother to describe the flag's placement: it is Sue who emphasises its significance, not Michelle.

4.2.2 Directing parental responsibilities

We've seen how the curator constructs a unified image, and accompanying narrative account, of the household, which represents particular relationships of power within the home and is demonstrable in material terms. We now want to expand upon the ways in which curatorial control relates to adult sensibilities. In particular, we are concerned with parents' demonstration of their responsibilities to their children.

Parental responsibility draws upon moral obligations and conventions by which a family is expected to live. Curators feel obliged to construct certain displays in order to meet these expectations, even if they conflict with household members' interests. For example, Sue describes her prominent display of a framed photo to meet expectations of her extended family, even though she feels it has little significance within her household. Yvonne describes removing from framed display photos that capture her children naked, out of concern for social etiquette. She also monitors their use of photos for teasing and coercing each other. Displays of parental responsibility are continually attended to, as exemplified by the annual updating of school photos in all our participating households. During his interview, teenager Adam presents a school photo from two years ago that his mother has "put away" in a box. Consider this excerpt from his account.

I like that one, yeah, because I haven't changed much since then. It just kinda looks right. It's better than the one that succeeded this one cause I look really weird in the next one. I hoped it would be replaced by a better one and then it wasn't and I just ignored it for a while. I'd like to display it, but we update them every year.

By making visible the annual receipt of a new photo from Adam's school community, his mother is seen to meet its expectations. Adam has come to recognise the social appropriateness of her actions and, like Cat above, is resigned to accept the display.

However, our findings reveal that teenagers do not always recognise what is deemed by their parents to be appropriate for display to others. In response to a task to provide a 'provocative photo', Eric, a father of two, shows the researcher a photo that he had recently retrieved from the attic, of himself and his wife Irene "joking about" when they were first married. He admits that, although the photo has great personal significance, he wouldn't like to display it to others because he considers it socially inappropriate to. But he is happy to share it with his household and, in fact, its display in the dyadic interview sparks a poignant discussion of past experiences between Eric and his daughter Emma. During this interview, Eric decides that personal photos like this one should be jointly owned by the household. Later on, though, Emma expresses her desire to show this photo to her friends because, to her, "it shows how fun-loving" her parents are. She proposes taking 'a photo of the photo' using her camera-phone and posting the image online. Eric expresses alarm at this proposition, the research context making visible to him a potential tension: he wants his household to have shared ownership of his personal photos; yet he recognises his responsibilities for protecting an image of the household-at-large; it is not appropriate for this photo to be displayed beyond the household.

Of importance here is not just that Emma's desire to display the photo beyond the household conflicts with her father's, but that she cannot see how he might consider its display inappropriate for representing their family to others. It might be that Emma is responding to seeing her father show this photo to the researcher who is 'an outsider'. Nevertheless, she still misjudges his intended use of it beyond this research context. Eric, in contrast, is seen to be able to differentiate between different contexts. We observe this conflict in other households as well. In response to a dyadic interview task, Adam presents a photo that he'd like to use to represent his family to others. But it is deemed inappropriate by his mother because it captures young children in a public house and for her represents the household involved in a socially unacceptable activity. It seems that the selection of appropriate photos for family portrayals is necessarily enforced by parental sensibilities.

The phenomenon of curatorial control points to a general issue about representing other household members. We've shown here the important ways in which curatorial control in family homes is tied to the establishment of domestic order and

unification. From the examples presented above, we draw particular attention to ways in which parental control is made *demonstrable* to teenagers at home because its coordination draws upon the material technologies that afford Crabtree et al.'s three 'essential components' of image-handling to the curator: photos' readiness to hand, photos' physical manipulation, and a narrative account that gives meaning to the photos' presentational forms. These are localised and directed by the curatorial voice. When Internet services like MySpace and personal devices like camera-phones mediate the domestic space they problematise the 'handling' of these three components.

4.3 Teenage photography

We shall now describe how the teenagers participating in our study operate within the curatorial framework outlined above. We discuss their use of photos for self-expression as part of their household and also independently of it.

4.3.1 Seeking autobiographical continuity

We've observed teenagers' general respect for curatorial control in our households, through Michelle echoing the curator in her bedroom displays and Cat and Adam's resignation to displays that they don't like. Curatorial displays don't necessarily produce conflicts of interest, though. By creating representations of their juniors, curators convey the roles their juniors play within the household, which is positively received by our teens. Michelle describes how an African carving serves to make physically manifest the sense that she plays a part in her family's stability: "it's always been my mum and her four girls". This image of 'mum and the four girls' is echoed through surrounding photographic arrangements as part of an autobiographical story for visitors, one that Michelle enjoys telling. The physical form that displays take is crucial to their efficacy as expressive resources, as is their location. Cat highlights this in reference to a photo-cube: "that's a cube, in my daddy's study and it's got equal number of photos of everyone and it's got the whole family on it and it's really cool and that just makes me feel like I'm one part of the grand cube of my family!" Cat adds that, by making this display visible at a site that he owns, her father demonstrates his paternal love for her.

The permanence, or stability, of family portrayals is also valued by teens. These constitute acts of display by which love is demonstrated as present and constant. At interview, Emma describes the personal significance of a photo capturing the household when she was a baby. It used to be displayed with salience in a wall-mounted frame. When her mother re-decorated their home she removed this frame, and Emma expresses a desire to return it to its' original site. She laments its current status in a drawer; "but it will go in my room now, cause I love it". The photo's significance stems partly from its familiarity (via its past salience) and partly from its capturing a typical event of her childhood: "I remember it: we always used to go there". For Emma, the photo's familiarity is inseparable from her memory, even though it is unlikely that she would remember the photo's capture. Cat expresses something similar about a task response to 'an ideal portrayal of family': "I really like that one: I can't remember it but I remember lots of times like it". All the teenagers value the display of photos that capture typical family events.

These kinds of displays are often accompanied by positive reminiscence. In Emma's words: "it just shows how we grew up as a happy family". Curiously, five out of the eight teenagers use the word "carefree" to characterise childhood and explicitly all link their life through past capture events to the present. Parents are sympathetic to the value placed on photos that convey this continuity, as Yvonne articulates poignantly: "I think it's important they should know that they're constant, so it's sort-of that benign love". Thus, it appears that chronicling dimension of home mode, reflected in the coherence and continuity of curated displays, is greatly valued by younger household members as well as adults.

4.3.2. Expressing sociability

As noted above, bedrooms contain sites that are curatorially allocated to teenagers for their own expression. Teenagers are seen to create displays that use printed photos amongst other artefacts for autobiographical reflection. Consider the following excerpt from Michelle's account:

[Insert Figure 3 here.]

Figure 3. Photo displays in Michelle's bedroom.

On the back of my door it's like a collage of all my photos and little letters and stickers and notes that my friends and family have given me [smiles]. It's like one big collage of everything personal, cause I tend to be quite that sort of person, because I love to do art and stuff. Like, around my room there's lots of collages and photos and - and - and personal things to me, even if it's just a plectrum that my ex-boyfriend gave me, it still brings back a memory, so I - I tend to do that quite a lot.

Here, Michelle describes her material arrangements as the manifestation of personal experience (Figure 3). Via their spatial organisation, gifts and notes contextualise photos in terms of past social exchanges. The way in which they are brought together reflects the 'sort of person' that Michelle is: their very construction reflects her communicative capabilities as an 'artist'. Note also that both friends and family are conspicuously represented: this example is illustrative of all the teenage accounts; all teens include 'family photos' in their bedroom displays.

We find that self-awareness and reflexivity is exhibited through these arrangements of artefacts is intended to produce a particular 'effect'. Michelle distinguishes her displays from her mother's "smarter" displays in other parts of their home: "I would probably go more scatty, I think, to suit like my personality, I'd go more like just - not necessarily pictures just dotted everywhere, but in a way - done in a way to look messy and rushed, because I think - I dunno - it has more of an effect". In a similar manner, Cat describes her handling of display materials in her bedroom: "It's like: if I put them all up, like, line, line, line, it would look really dull, but everything's sort-of disorganised, so it's got, like, theatre tickets - loads of theatre tickets in there, actually - and cinema and vague things that maybe I don't have a photo of, but I have that and that; so, it's like, random things that I like to have". Across households, teenagers consistently describe their attempt to construct collages that look 'messy' and 'disorganised'. The materiality of these collages and the way in which memorabilia such as a plectrum or a theatre ticket is incorporated is integral to their meaning. The apparently "random" (in Cat's words) inclusion of media expresses a form of nonchalance or casualness. But these gestures are not casual in construction, only in effect: we see they are meticulously crafted. Figure 3 shows how, in material terms, they can be neatly contained within a doorframe in obedience with the curatorial allocation of space.

We also see that these teenage displays require continued efforts to maintain. Although wall-mounted collages are made permanent features, their contents, including the photographic, are updated regularly. We understand these updates to reflect dynamic social exchanges and the central role of friendships in self-presentation at home. We draw from Emma's account to illustrate how. Emma either uses her camera-phone or borrows her mother's camera (with consent) to take photos, in both cases downloading them on her personal laptop and printing them. She describes displaying photos on her bedroom wall that appear, again, casual, "spontaneously captured", showing her "playing around" with friends. Wall displays are continually updated as-and-when new photos are captured and circulated between Emma and her friends (mostly via MSN or social networking sites). Hence photo capture, sharing *and* home display are all linked in expressions of friendship: "we send quite a lot of photos between us and stuff". Emma describes her treatment of a photo given to her by a friend: "I had it on (bedroom wall) display and then I put it away because I change my photos around", adding "when I get newer pictures of us - if I just see them I change them - sort-of keep them updated". Emma describes putting photos taken down from display into a 'photo-box' in her bedroom. But as a result of her continual 'updating', Emma isn't always sure of a given photo's display status.

It was on display. I've even got this on my phone as well. I took a picture of it cause I love it so much [laughs]. It was on display but I've moved all my stuff around, so I can't remember if it still is.

This dynamic handling of photos is peculiar to teenage photography and distinct from home mode conventions that, despite the adoption of digital cameras, are still reproduced by mothers in other domestic spaces. Mothers talk of capturing and displaying digital photos with mind to printing them, framing them or putting them in albums. We see here how the continuous shifting of teen photo displays extends into the digital realm, as photos are moved between platforms such as the bedroom wall and the camera-phone screen.

The Internet offers access to photoware for teenage expression that would be otherwise unavailable at home. Cat, for example, relies upon online photo sharing programs because she doesn't own a digital camera and only has limited access to her parents', but she *does* have Internet access through use of the 'family computer' as she describes below.

I began to rely on my friends, cause my friends have got this really wonderful thing: you know Photobucket? Well, basically, whenever we do an outing or whatever - all my friends seem to have digital cameras - fine - and they'll all load their photos onto the Photobucket - we have 23 pages of it - and it's just photos of things that have happened, and everyone takes photos of everyone, and then you can go on there, copy them, save them as your own, and stuff. So, I don't really need one [a digital camera] for friend outings and then Maman [Mum] takes the photos with us, [laughs] so family outings are sorted.

To reiterate, none of our participating teenagers have their own digital cameras (with one exception), but acquiring capture devices appears unproblematic as they use camera-phones or borrow their parents' cameras and camera-phones. Cat, as with four of the other teens, prefers borrowing her mum's camera to using her own camera-phone because of issues with image quality. The point is that, once content is downloaded onto the computer, ownership of capture devices is somewhat irrelevant and ownership of content is up for grabs. Internet access at home is of great significance in this respect: all teens draw upon photoware made available online for their personal expression.

Michelle describes her use of a social networking site, MySpace¹, as her "own thing" independent from her family. Michelle's self-portrayal on MySpace is very different to her bedroom displays. In response to a task to show the researcher a 'provocative photo', Michelle shows a photo on her MySpace 'profile' that she considers to be "quite sexy", pointing out that this would not be shown around her home, that is, in a familial context. Nevertheless, the photo was captured at home using her mother's camera and uploaded via the family computer. In this way, desktop and household photoware can empower

¹ <http://www.myspace.com>

teenage photo displays that take place at home but independent of the household. Our other participants mention use of MySpace alongside Facebook², Bebo³ and Photobucket⁴ as online platforms for their personal photographic expression.

In this section we've hoped to highlight that teenagers demonstrate their respect for curatorial rules and the domestic order in the physical home environs: their bedroom displays are a contained 'mess'; and they observe rules of access to parents' photoware. A key finding is that teenagers, for the most part, appreciate curated representations of family, which shows that printed photos and the home mode conventions (of Kodak culture) remain significant to both parents and teenagers following digitisation. We've also shown ways in which teenage computer-mediated communication is closely connected with bedroom displays, even though, paradoxically, bedroom displays' communicative power comes from the materiality of their content ~ the mixing of printed photos with other artefacts. Lastly, we've shown that the desktop computer offers a domain for teenage expression at home that appears to be independent from curatorial rules or parental monitoring.

4.4 Curatorial control versus teenage expression

Teenage photo displays can be monitored by parents within the home, but it is relatively hard for parents to monitor teen displays that are made beyond the home environs. Desktop photoware, whilst physically situated within these environs, enables photo displays that transcend them.

4.4.1 Curators lack expertise on digital technology

Across all participant households, the incorporation of photoware has led to the creation of digital family photo collections that are organised on a 'family computer'. We can make an important point here about curatorial management of photoware, observed in all households: although use of digital cameras and, in some cases, camera-phones, is largely constrained by parental control, the desktop computer is made jointly accessible to all, as is, by default, photoware and the household's photo collection. Curators explain their reason for this: they understand how to use their digital cameras, but not photoware (including peripherals such as printers); democratic access to the desktop is granted in order that teenagers may assist curators in photowork, "to get the photos off the camera" (in Sue's words) or "off the computer" (in Yvonne's words).

All of the parents taking part in the study express their lack of computing expertise and the constraints imposed by this upon their use of photoware. Yvonne views this as a generational issue: "we have a problem working out how to get photos off the computer at this stage in life". Further to this, parents express their lack of expertise in relation to their teens' competence. Teens are presented by their parents as the household computer experts. For example, Sue describes being 'stuck' with her photowork and anticipates assistance from her children to help accomplish her plans.

I mean, the girls say they'd help. Michelle: she's very arty and she said she'd help me. I'm not technical, you see, so I need her to help me to, you know, get things printed out, or whatever.

The notion of collaborative photowork between parents and teens would seem to imply the positive fostering of intergenerational dialogue and intimacy. But positive implications are only visible in parents' accounts. In teenagers' accounts it transpires that, whilst the desktop offers 'democratic' access, it actually affords, in terms of resources to-hand, an inversion of intergenerational power dynamics, and an inversion of control over resources for expression.

4.4.2 Teens use the desktop to undermine curators

At their individual interviews, teens describe their use of the desktop to surreptitiously undermine curatorial control. We can illustrate this with an excerpt from Cat's account. Here she describes her access to the household's photo collection, which is theoretically managed by Yvonne.

Well, Maman's got her camera and then her camera sort-of loads them [photos] into one place and then, without telling her, I go on there and make copies of all the ones that I want, which, generally, are ones of me [laughs] and - I'm really vain, but it's cool, and [laughs] - so I take those ones and then I sort-of view them as mine. But she has copies of them, so it's cool.

We see here how, on the desktop, Cat is at liberty to duplicate her mother's photos and handle them as she chooses. More to the point, this is achieved unbeknown to Yvonne, thus invisibly undermining curatorial control over photo management. Although Cat claims to protect the organisational structure Yvonne has put in place, she goes on to claim "hiding" her mother's photos at will.

² <http://www.facebook.com>

³ <http://www.bebo.com>

⁴ <http://www.photobucket.com>

Hiding family photos from the curator is strategically empowering for Cat. In reference to a particular photo, she adds: “it’s in the depths and depths of my secret, secret files [laughs], cause I keep everything, well, in a secret file and then there’s things which I’ll delete from every other person’s account and then just keep mine in case it - I don’t know why - blackmail or something”. We’ve already noted that Yvonne expresses a need to monitor the display of photos by her teenagers for teasing or coercing each other. But Cat’s desktop activities are invisible to her mother, therefore impossible to monitor. Issues of *misrepresenting other household members* are raised here, but in different ways: Cat’s younger sister is also computer savvy and capable of manipulating her mother’s image files; in this instance Cat hides files, not from her mother, but rather from her sister to protect herself from being ‘blackmailed’.

Desktop activities present issues surrounding parental monitoring more generally. We’ve seen above that curators are familiar with their teenagers’ bedroom displays: they can visually monitor them for appropriate expression and coordinating photos’ distribution. For example, Sue can observe when Michelle takes a photo print of ‘mum and the four girls’ from the ‘family photo-drawer’ for display in her bedroom. But Sue can’t monitor the photos that Michelle displays on MySpace, and, whilst Michelle’s MySpace displays aren’t intended as familial representations, they do present an image of her to others that, whilst living at home and in her care, Sue feels obliged to protect for family interests.

What we can show through these examples is that desktop displays can undermine the power relationships within a domestic order that are considered important for protecting the household and its representations. This can be further illustrated by returning to our example of Eric, Emma and the tension surrounding the potential online display of Eric’s ‘provocative’ photo. Following the dyadic discussion and despite her father’s explicit disdain at the prospect, Emma uses her camera-phone to make a copy of the photo. She is now at liberty to display it as a ‘family photo’ independent of her household and unbeknown to her father.

5. DISCUSSION

Throughout the paper we have conceptualised photos as resources for personal and family representation and photo displays as situated acts afforded by a home’s domestic order. We now return to our original concern with how the uses of photographs for representation are changing with digitisation, and whether or not they are becoming more democratic.

5.1 Curation is a central feature of family photography

On the question of the use of photographs for representation, we have found a strong domestic practice of *home curation* being carried out by the mothers of our households. This reproduces the conventions of home mode photography through traditional framing activities and album-making based on paper prints (Chalfen, 1987, Rose, 2003), despite the fact that all these households have effectively switched to digital photo capture. Whether through lack of interest, aptitude or sheer preference for the tangible, mothers use digital photo printing as a means of preserving their existing practices, which are now enhanced by increased volumes of photographs supplied to them by their children. Home mode conventions are reproduced in the content of photos, too: curated displays retain the subject matter of familial integration (Rose 2003). This has been shown by the fact that, from tasks relating to the *representation of family*, only one out of eight teens presents a photo that they, themselves, have captured. Interestingly, teens supply mainly images of themselves for this purpose rather than images of the family itself. It appears that ‘family photos’ are typically captured by mothers, regardless of whether or not capture follows digitisation. Indeed, in every participating household, the mother continues to assume the roles of family photographer, family chronicler *and* home curator. The compliance of teens with these roles and activities is not merely passive, but reflects in our view a sincere appreciation by teenagers of the sense of familial stability that they offer. Hence, the practice of curation is deemed significant for *both* teens and parents in contemporary home life, carrying an important *social function* in directing the household’s social organisation and its connection to the place of home itself.

These findings extend those of Drazin & Frohlich (2007) who point to a variety of ways in which printed photo displays are framed and positioned around the home to reflect the social order within and beyond the household. In our data we can see the importance of the mother in managing this process and its continuation into a more digital and digitised world. The perpetuation of home mode curation in households that have ‘gone digital’ also supports findings from another recent empirical study by Miller and Edwards (2007). Although not adopting an intergenerational perspective, the authors distinguish forms of home mode display from those associated with emerging practices peculiar to the take-up of digital. Most significant here is their claim that those practicing post-digital Kodak culture retain forms of communication relating to the display of photos to a known and invited audience. Concerns for ownership and privacy of content shape home mode practice. By contrast, emergent cultures embrace the affordances of the Internet to display photos to unknown and public audiences. We align teenage photography with these emergent cultures and highlight teens’ tendency to *post* rather than *send* photos within the context of Miller and Edwards’ distinctions. Indeed we have found that representing family online does not figure prominently in the curatorial mindset.

5.2 Digitisation problematises curation

Leading from this, our findings reveal intergenerational differences in the take-up of digital photography. In the households we have visited, curators' take-up is only observed to the extent that they use a digital camera. Curators perceive the desktop computer and its photoware as obstacles to the practice of digital photowork, including the download of photos from a camera to the computer. Curators account for obstacles in terms of lack of computer literacy. Consequentially, digital photos are not *ready to-hand* for chronicling and curating. By contrast, digitisation is comprehensively taken up by teens, who manipulate digital photos using photoware and display photos via printing for bedroom walls, emailing to friends or posting on social networking websites like MySpace or Facebook.

We can relate these intergenerational differences to the achievement of curation as domestic order, identifying ways in which digitisation problematises curation. To do so we find it useful to return to the three essential components outlined by Crabtree et al. (2004) for the achievement of photo-sharing with paper prints: (i) readiness to-hand; (ii) manipulation of physical properties for distribution; and (iii) production of an account that attributes meaning to photos to-hand. The first of these three points has just been addressed in terms of issues: as digital files, photos are relatively inaccessible to curators; photos have to be printed in order to be ready to-hand for practicing home mode; and the printing process can require a dependency on teens.

The second point relates closely to the first, but invites an interesting discussion about controlling *the distribution of familial representations* in the digital realm. Our findings show the potential for multiple representations of family to coexist at home. We've drawn attention to the ease with which photos can be duplicated by teens, for example, by digitally capturing a print on a camera-phone, or duplicating digital image files, and then observed how a photo's meaning is changed through teen handling in an alternative presentational context. Here, we can elaborate on Crabtree et al.'s third point about the production of accounts. The salience of the *narratives* that accompany teen displays cannot be curated as they can when albums or ambient home displays are constructed; control over photo handling is decentralised via the desktop. In many cases, teens echo the curatorial narrative of family (e.g. Michelle echoing Sue), but in other cases they construct an alternative narrative that is deemed curatorially misrepresentative (e.g. Emma representing Eric). Therefore, this decentralised distribution has negative implications for the practice of home curation and, by extension, family photography.

Building on existing research on domestic displays and their coordination (Crabtree et al., 2003, Crabtree and Rodden, 2004, Crabtree et al., 2004), the extension of display acts into the digital realm is seen to problematise the visibility of resources by which members establish and manage self-expression, that is, the *demonstrability of photo displays*, at home. Thus, photoware affords a curatorial blind spot. Not only is individual control afforded by the desktop in a novel way (Kirk et al., 2006), but it interferes with the domestic order, with implications for parental monitoring. Perhaps strikingly, none of the parents in our study had, at the time of our visits, installed parental monitoring software on their family computer, nor on the two teen laptops. We interpret this in relation to parents' lack of computer literacy and their ignorance of the subversive potential of desktop activity.

5.3 Familial democracy is subject to subversion

We can now turn from the digitisation of family photography to its democratisation. In light of our findings, we can further clarify what we mean by democratisation for the purposes of this discussion. Democratisation can be understood in the context of a trend in Anglo-American politics towards *familial democracy*, as articulated in British politics by Giddens (1998):

Democratisation in the context of the family implies equality, mutual respect, autonomy, decision-making through communication and freedom from violence. Much the same characteristics also supply a model for parent-child relationships. Parents of course will still claim authority over children, and rightly so; but this will be more negotiated and open than before. [Giddens 1998: 93-94]

We find that our participants aspire to Giddens' familial democracy. In their home displays, and accompanying accounts, curators promote the notion of democratic expression within the household. However, accounts also reveal ways of handling photos, photoware, and other artefacts, that jeopardise the realisation of a democratic relationship between teens and parents. This applies both to the persistence of parents in imposing their own preferences on representations of family within the household, and to the subverting tactics of teens in using digital technology to express themselves freely with personal photos published online.

The first case is illustrated by the bathroom tile display in Figure 1, of which the mother, Yvonne, says: "I never force stuff because they also know it works both ways: I get rid of photos that aren't nice; I don't see why anyone should have a photo on display that they hate". Despite claiming not to 'force stuff' on her teens, Yvonne is seen to act on her own value judgments, even when these directly conflict with her teen wishes. Whilst teens express their general appreciation of curated displays, there are also instances at interview when they contest them. For example, Cat exclaims about the wedding photo display (introduced above): "I *hate* that one!". But, in response, Yvonne asserts her voice: "Tough, that's your opinion". Contentious photos are revealed in all of our dyadic accounts, but mothers usually have the final say on their display within

the home. The second case is illustrated by the instance of desktop photowork described by Cat regarding her ‘hiding’ of family photos.

Hence, the concept of familial democracy eschews the conflicting intentions that parents and juniors bring to their practice of photography, which, as we’ve seen, mediates intergenerational power dynamics. Our findings align with those of Soloman et al. (2002), who, based on their own empirical studies, argue that “the parental investment in children is such that the ideal of democracy must be inevitably subverted” (2002: 966).

There is a clear disjuncture between the quest for intimacy as encapsulated by Gidden’s ‘pure relationship’ and the lived reality of the inequalities between parents and children, in which mutual disclosure is undermined by the struggle for control. Both parents and teenagers ... genuinely subscribe to a ... discourse of democracy. (H)owever, ... explicit goals for openness can be compromised by conflicting underlying goals relating to the renegotiation of power between parents and teenagers. (2002: 980-981).

This excerpt accounts for the power dynamics at play in our findings. We can argue that curators’ reliance upon their teens for photowork is inevitably dysfunctional, with implications for intergenerational collaboration around family representations.

6. DESIGN CONSIDERATIONS

In this section we present some key issues for designers of photoware to consider for families with older teens living at home.

6.1 Mothers are target users for domestic photoware

In the discussion section we have made a case for the significance of home curation and the role of the mother-as-curator in contemporary domestic-familial settings. It is anticipated that digital tools to support curation would be greatly valued by both teens and parents. Based on this, we suggest that it is crucial for designers to target mothers as users of domestic photoware including display technologies and, in particular, to address their issues of computer literacy.

Supporting the practices of mothers-as-curators means supporting the home mode of communication. To conclude, we offer design considerations that address curatorial concerns for parental control, the recipients of displays and the analogue handling of photos. Curators need tools to empower their handling of digital photos, ensuring photos’ readiness to-hand, their manipulability at distribution, and the coordination of accompanying narrative accounts.

If photoware is to be designed in the interests of *curating* a family portrayal, it must, rather than simply affording individual control (Kirk et al., 2006), support the situated and *demonstrable* acts by which domestic order is established at home. Curatorial control is not necessarily in the interests of one person; and the notion of ‘demonstrability’ is particularly significant when considering the shared ownership of photo collections and the dialogical ‘means’ by which photos are managed between family members. Photoware for family collections must support the *demonstrability of the means of management* to all who use the photos. This includes managing which photos are displayed to which people and where, a consideration that could be supported by encrypting and tagging content.

6.2 Digital family photography concerns monitoring online distribution

Curatorial issues with teens posting rather than sending photos can be addressed in terms of making teen desktop activity more visible to curators. Parental monitoring is embraced from a design perspective following our insights into the desktop subversion of familial democracy by teens; and design could focus on mechanisms for monitoring the desktop distribution of content. Existing commercial monitoring software⁵ takes advantage of the family computer as an internet gateway and includes three main functions: the chronological *logging* of window activity, IM chat history with real time alerts to contentious content; the *blocking and filtering* of contentious content; and *time-based access* to application use. These parental controls are currently being built into operating systems or are available from some social networking site providers (including MySpace).

However, in spite of these services, the online posting of individual photos remains a problem for monitoring. As Crabtree et al. (2004) point out, once content is posted online, its further manipulability is near impossible to control. The watermarking or encryption of individual photos is commercially available but not yet integrated into services for the domestic-familial context. Although site or application blocking is commercially established, image blocking still relies upon social order within online friendship networks *and family households* rather than service providers. This is reflected in terms of use (e.g. Facebook⁶). Given this, parents’ ignorance of posting activity is a key issue and could be addressed through the development

⁵ <http://www.parentalspy.com>

⁶ <http://www.facebook.com>

of online forums for promoting parental awareness of monitoring applications and interpersonal strategies for local mediation of initial online postings. This could be coupled with designers targeting mother-curators as potential users of image encryption applications. These considerations essentially imply that, whilst the monitoring of incoming content largely supported by current applications, the monitoring of *outgoing* content is under-supported, presenting a novel design space for photoware.

6.3 Design for the photo-as-object

Tangibility and manipulability are central to curated photo displays at home, for both parents and teens. As with mothers' displays, teenage bedroom displays exhibit a rich ecology of tangible artefacts. When asked by the researcher what her 'dream bedroom display would look like', Cat reiterates the expressive value she places on interleaving photo prints with other material artefacts: "It would be something, that by, a wonderful miracle, had sort-of things that weren't just photos in it as well, like - to have variety as well - can't just be, like, one - and so you can just pick them up as well; so, like, the cube's fun cause you can take it apart and re-arrange it". In this extract Cat refers to a photo-cube, also alluded to in the findings section above. Alongside the mixing of media, Cat expresses her wish to be able 'rearrange' displays. The provisional status of teenage displays is a key feature of their efficacy as an expressive resource.

Findings support the dynamic handling of the photo-as-object (Edwards, 1999), sparking reflection on design possibilities that harness the affordances of paper whilst embracing the dynamic affordances of digital imaging and the potential of tangible computing. Designers could point to technological developments in electronic paper (e-paper) to consider digital displays of photos on electronic surfaces that leverage affordances of photo prints to the extent that they are movable, hand-held and lightweight. Recent technical experiments to inspire design include: the 'Post-Bits' prototype that builds on the affordances - and interaction aesthetics - of 'Post-it' notes to enable casual gesturing (Matsumoto et al., 2005); and the 'SecondLight' prototype that extends tangible interaction with digital images beyond a desktop surface and across multiple surfaces (Izadi et al., 2008).

Recent developments in table-top and surface technologies (O'Hara et al., 2003) start to address issues concerning the demonstrability of digital photo displays within collocated social interaction, but not in terms of 'curatorially distributed sites' across a home's ecology. There is potential for the ecological nature of curated photo displays to be supported by distributing multiple digital display devices, dedicated to photo display, across the home. We have started to explore this through prototyping exercises (Durrant et al 2008). Nevertheless, as we've already said, none of our households own a digital display frame at the time of the study, nor express interest in acquiring one, so it is hard to gauge from our sample how this class of display device might be taken up by curators in the familial-domestic setting. Sensitised to this potential lack of interest in such products, we identify a central challenge for designers: to support home mode - and the domestic order it reproduces, whilst embracing what we observe as an inevitable transition to digital. We have started to address this challenge in our own follow-on studies. In design terms, we reinforce that addressing computer literacy for desktop activity is the first step to integrating digital into home mode and engaging curators in the creative potential it affords.

7. CONCLUSION

By highlighting the display of photos in family homes, we have attended to ways in which the visible and situated materiality of display technologies affords curatorial control and the demonstrability of a family's domestic order. Our findings highlight photoware's lack of efficacy towards these ends. We also find that, whilst the trend towards photography's digitisation is very much underway in family homes, the democratisation of family photography is aspired to but not possible to realise because of the social and ethical ordering of intergenerational power relationships.

Intergenerational conflicts of interest represented in the findings open up an interesting issue concerning *whose interests* a designer should support. As discussed above, we have tackled this issue in terms of designing for a household's 'means of management', which is, in the case of our sample and without exception, the mother's curatorship. On the subject of the mother-curator label, our intentions for this study were to carry out an in-depth, phenomenological analysis on intergenerational interactions and our 'snowballed' sample represented mothers over fathers; mothers were self-selecting due to their participation in photography. In future studies it would be interesting to extend these investigations to consider gender and the roles of paternal, sibling and extended family relations as well.

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