Food for Talk: Phototalk in the Context of Sharing a Meal

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Photographic mementos are important signifiers of our personal memories. Rather than simply passive representations of memories to "preserve" the past, these photos are actively displayed and consumed in the context of everyday behavior and social practices. Within the context of these settings, these mementos are invoked in particular ways to mobilize particular social relations in the present. Taking this perspective, we explore how photo mementos come to be used in the everyday social setting of sharing meal. Rather than a simple concern with nutritional consumption, the shared meal is a social event and important cultural site in the organization of family and social life with culturally specific rhythms, norms, rights, and responsibilities. We present a system—4 Photos—that situates photo mementos within the social concerns of these settings. The system collates photo mementos from those attending the meal and displays them at the dining table to be interacted with by all. Through a real-world deployment of the system, we explore the social work performed by invoking these personal memory resources in the context of real-world settings of shared eating. We highlight particular features of the system that enable this social work to be achieved.

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CONTENTS

1. INTRODUCTION

With the major proliferation of digital photo technologies, we have seen gradual shifts in domestic photographic practices. A variety of digital capture technologies have opened up photographic capture to a wider range of the population (Durrant, Taylor, Frohlich, Sellen, & Uzzell, 2009; Shove, Watson, Hand, & Ingram, 2007), whereas other forms of photoware offer new ways for people to store, organize, tag, and manipulate photographic content. Likewise, new opportunities have arisen for presenting photographic content in different social settings with digital photo displays and communication channels such as e-mail and online social networking sites. These shifts in practice have drawn attention from the human–computer interaction (HCI) and design community. Of particular interest to us here is the work exploring social practices of display and collocated sharing of photographs. A central concern underlying these social practices lies in the ways that they signify and cue autobiographical memories (e.g., Burt, Mitchell, Raggatt, Jones, & Cowan, 1995; van den Hoven & Eggen, 2008) – that is, personal memories about events in one's life or about one's life (Conway & Rubin, 1993). This lends autobiographical photos some of the functions ascribed to autobiographical memories (Cohen, 1996; van den Hoven & Eggen, 2008). These include the use of autobiographical memory in construction, maintenance, and understanding of self-identity; mood regulation; making friends and maintaining relationships; facilitating problem solving based on shared experiences; shaping likes, beliefs, values, and attitudes; and helping predict the future on memories of the past. Many of these functions concern social use of personal memories enabled

through the communication opportunities they provide. Research within and outside the field of HCI has demonstrated these functions of autobiographical memories in the context of collocated photo sharing (Chalfen, 1987, 1998; Crabtree, Rodden, & Mariani, 2004; Durrant et al., 2009; Frohlich, Kuchinsky, Pering, Don, & Ariss, 2002; Lindley, Durrant, Kirk, & Taylor, 2009; Sontag, 1977; Swan & Taylor, 2008; Taylor, Swan, & Durrant, 2007).

Of significance in the HCI research is its attention to shifting socio-technical context of these behaviors. This has provided a deeper articulation of the material properties of photowork artifacts and contexts of use and the ways these influence the social dynamics of display and sharing. For example, studies have shown location and topographical arrangement to be important factors in shaping social meaning. These autotopographical arrangements of photographic display provide a kind of landscape representation of their owner's personal memories and identity (e.g., Gonzalez, 1995; Petrelli et al., 2008; van den Hoven & Eggen, 2008). Such topographical arrangements are deliberately constructed according to the particular reminiscing functions to be *invoked* by the mementos. Petrelli et al. (2008) highlighted how different types of personal mementos (such as photographs) are placed in public or private spaces according to how they are to be consumed in everyday life. For example, family and shared spaces have a higher proportion of mementos pertaining to relationships, whereas more idiosyncratic and individual mementos for personal reflection and reminiscence are located in private spaces within the home. Significant in Petrelli et al.'s (2008) work is the notion of invocation, that is, the ways that people interact with their personal memory artifacts relating to factors such as their material properties and positioning within the home. A key argument here is that mementos are not passive signifiers of memories simply to be preserved but rather that they are more actively consumed in the context of everyday behavior and social practices. In this respect, we can conceive phototalk, or more broadly "mementotalk," not as a decontextualized activity but rather as something situated in other practices, such as entertaining guests, family get-togethers, and so forth. When we consider the different material properties of photo mementos (be it passing around printed photos or viewing images on a laptop), our concerns are not simply with how these different representations shape the structure and dynamics of phototalk and reminiscing but also how these personal memory practices come to shape the larger activities in which they are invoked.

With this perspective in mind, we focus in this article on a common social practice as a particular setting for understanding phototalk, namely, *commensality*— "the practice of sharing food and eating together in a social group" such as a family or friends (Ochs & Shohet, 2006). Our choice of this setting in some respects echoes the calls of Bell and Kaye (2002) and Grimes et al. (2008) in their discussion of how technology might relate to the experiences and cultural practices around shared eating. More specifically, though, our motivations for considering this social practice as a locale for phototalk and personal memory narratives are some key parallels between phototalk and commensality in terms of their underlying motivations, values, and social construction. As commensality research highlights, the shared meal is not simply a concern with the pragmatics and necessities of nutritional consumption. Rather,

these occasions are social events and cultural sites, important in the organization of family and social life (Bell & Kaye, 2002; Charles & Kerr, 1988; DeVault, 1991/1994; Douglas, 1975; Ochs & Shohet, 2006; Warde & Martens, 2000). As we discuss further through the literature, many of the functions discussed in relation to autobiographical memory can be seen also within these settings. Likewise, these social gatherings have their own sets of rhythms and norms associated with talk and eating that are affected by the material arrangements of the meal.

Given these parallels, then, our aim was to explore how photographic materials and personal memory narratives could be sympathetically invoked within the broader social concerns of commensality. We present a photo display system called 4 Photos that is designed as a table centerpiece. The design of the system is informed by the understanding of social-technical factors shaping the practices of commensality and the social dynamics of phototalk drawn from the literatures on collocated photo sharing and anthropological studies of food consumption. After exploring these literatures in more detail, we present the design of the system, highlighting the rationale for particular design features within the context of particular social concerns. The article then goes on to describe some fieldwork with the system in which it was deployed in real settings of commensality with a view to understanding the social practices that developed around the system and the meal. The aim here is to demonstrate ways in which the system provides new values and behaviors within this context as well as to understand areas where shifting social dynamics fit (or not) with appropriate forms for shared eating practices.

2. PHOTO DISPLAY AND COLLOCATED PHOTO SHARING

The role of photography in domestic life is an important one, highlighted by Chalfen (1987) as a socially engaged practice through which family norms, traditions, and values can be expressed and maintained. Such practices are reflected in activities such as the display of photographs in the home and the talk that is performed around photographs. These ideas are seen too in foundational work in HCI and computer-supported cooperative work on photographic practices such as the work of Crabtree et al. (2004) and Frohlich et al. (2002) on phototalk during the collocated sharing of photographs within domestic settings. Frohlich et al.'s work shows how photos enable people to engage in *storytelling talk* around personal memories cued by photographs—providing information to those not present at the depicted event—as well as *reminiscing talk*, which involves the shared discussion and reminiscing among those present at the event depicted. Crabtree's analysis of photo sharing practices is particularly important in demonstrating the interactionally embodied nature of phototalk around printed photographs. The way that talk is collaboratively constructed and coordinated is seen as a practical achievement realized through the way social groups gather around the photographic representation, the way the physical printouts are oriented to group

members, passed around, and gestured toward. Although this work focuses on the paper-based photographic representations predominant at the time, it is nevertheless significant in how it relates articulation work and interaction work to the material properties of the representational artifacts.

Such accounts of the materiality of representation are often missing from discussions of technology and sociological studies of photographic practices yet are an essential component of the ways that meaning and social practices are constructed using photo mementos (e.g., Durrant et al., 2009; Taylor et al., 2007). As we have already discussed, autotopographical arrangements of photographic mementos are a significant feature of these material properties. The placement of photographs can be used to bestow particular significance to the events, social relationships, and time periods signified in the photographs. Different types of photographic mementos can be found in public and private areas of the home that relate to how these spaces are used in everyday family life. Through their placement in these locations, opportunities are created for these personal memory signifiers to be invoked in the context of particular social occasions.

Other material properties of photographic representations, too, come to affect the ways we individually or collaboratively interact with the artifacts, which in turn affects how personal memory narratives are constructed and coordinated. Different types of representations such as framed photographs fixed to a wall, printed photo albums, individual prints, and laptop and slideshow presentations all have very different social properties. For example, they each create particular proxemic arrangements of people in terms of how they physically organize themselves around the display and in relation to collocated others. The impact of this on viewing and interpersonal awareness among group members leads to quantifiable changes in the ways that phototalk is occasioned (e.g., Lindley & Monk, 2008). These types of representations are also different in terms of opportunities for interactional control by those present around the photo artifacts. Printed photographs are notable here in the asymmetrical nature of interactional control, whereby the personal holding or passing the photos is privileged in terms of conversational control and contribution. This establishes an asymmetric presenter–audience relationship. Similar findings have been quantifiably demonstrated with the use of laptops for photo presentation (Lindley et al., 2009; Lindley & Monk, 2008). This work highlights how talk patterns and content are closely related to the ability to control and access an interactive photo display (e.g., slideshow on a laptop). Control over the interactive presentation affords a much stronger presenter role in relation to photo-cued personal memory narratives, while those unable to control the interaction assume the role of audience. Of concern to us in this article is how we can alter these control dynamics through more democratic interactive mechanisms that can be exploited to shift the boundaries between audience and presenter and overcome the asymmetries in conversation (cf. Apted, Kay, & Quigley, 2006; Hilliges & Kirk, 2009; Lindley et al., 2009; Lindley & Monk, 2008; Shen, Lesh, & Vernier, 2003).

Further issues of control that relate to audience–presenter relationship lie with the curation and ownership of photographic mementos. As several authors have

noted, ownership of the photo bestows particular social privilege in terms of conversational control (e.g., Crabtree et al., 2004; Durrant et al., 2009; Lindley et al., 2009; Lindley & Monk, 2008). Traditionally, curatorial control of photo display in domestic setting has resided with the family member in charge of the photographic technology (Chalfen, 1987; Durrant et al., 2009; Rose, 2003). These members have been responsible for the display of family identity and memory through photo mementos and consequently more responsibility for the construction of narratives around these displays. But with wider access to capture technologies, digital display, and dissemination mechanisms, responsibility for this curation no longer resides with single family members but is now a more shared responsibility. This in turn opens up opportunities for other family members to invoke photographic mementos and participate in personal memory narratives in the context of everyday social situations. These particular shifts still closely bind memento ownership and content to the immediate family members that reside there, privileging these members when it comes to their use in personal memory narratives (e.g., relative to guests visiting the home). But other technological shifts are again challenging these traditional asymmetries. For example, networked photo displays are widely available, with some examples that more specifically connect to and source content from online photo repositories such as Flickr and Facebook. These can extend opportunities for curation beyond immediate household members, thereby creating potential opportunities for participating in photo-based narratives within the household. Curiously, though, this relationship has not really been given any deep analytic attention from a behavioral perspective. Although the work of Miller and Edwards (2007) exploring online photo-sharing practices with sites such as Flickr and Facebook is informative here in relation to how different types of people manage public and private boundaries in this space, we are not aware of work that more directly explores autobiographical and social practices relating to the situated display of Facebook images in the home.

3. COMMENSALITY—EATING TOGETHER AS SOCIAL PRACTICE

Given the central role of food and eating play in our lives, it is not surprising that several efforts within HCI have explored the intersection between technology and food (e.g., Mankoff, Hsieh, Hung, Lee, & Nitao, 2002; Svensson, Höök, Laaksolahti, & Waern, 2005; Svensson, Höök, & Cöster, 2001; Tran, Calcattera, & Mynatt, 2005). The perspective of this work assumes what Grimes et al. (2008) argued to be a "corrective" role attempting

> to ameliorate the undesirable aspects of the *human* in the interaction with food. They inform individuals (to reduce inefficiency, increase nutrition knowledge, and compensate for inexperience, for instance); they assist and guide individuals (to reduce uncertainty and compensate for inexperience); and they tame the environment (to reduce users' distraction). (Grimes, 2008, p. 470)

Although such technologies have a legitimate role, this focus ignores other social and cultural aspects of food consumption. As Bell and Kaye (2002) discussed in their "kitchen manifesto," technology design in this area needs to be conducted with greater socio-cultural sensitivity focusing less on concerns of efficiency or correcting "problems" and more on the social values and meanings created through our food related activity. Grimes et al. (2008) made similar arguments, outlining an agenda for technology and food that is "celebratory"; more specifically, an agenda that is concerned with "creativity, pleasure and nostalgia, gifting, family connectedness, trend-seeking behaviors, and relaxation" (p. 471). In setting this agenda, there is an acknowledgment of the paucity of technology-related research, design, and under-standing in this area. In their own HomeBook example, though, they do acknowledge the importance of social media as a potential resource through which some of these values might be realized. Our own approach in this article attempts to embrace the concerns of these authors.

Although there is an acknowledged lack of HCI-related research here, there is considerable body of research in sociology and anthropology relating to the social practices of food and eating and in particular the practices of shared eating. The central important theme of this work is how shared mealtimes are rich areas for the production and sustainability of *family* life.[1] Mealtimes are occasions used to forge relationships that construct and reinforce the social order. Through the commu-nicative behaviours and narrative production that characterise mealtimes, there is a social construction of shared knowledge as well as particular sensibilities and moral perspectives (Larson, Branscomb, & Wiley, 2006). The exchange of narrative accounts of personal and collective significance is as central to the meal as the nutritional purpose of the food (Mintz & Du Bois, 2002; Ochs & Shohet, 2006). Many of the social and symbolic functions of these communicative acts and narrative exchanges can be found in phototalk (e.g., Lindley et al., 2009).

Within these high-level universal roles and values of commensality, there are significant local and cultural variations in the details of practice, rituals, and expected behaviors that make up shared eating occasions of particular genres. These shape the social dynamics of the occasions and the ways that talk is appropriately organized within understood norms. In designing for this space, there is a need to be sensitive to these issues: They create certain structures of etiquette and discourse organiza-tion within which new artifacts must sit but can also be a site of manipulation by household members to convey particular social relations and effect (e.g., DeVault, 1991/1994; Douglas, 1975, 1984). Of course it is not possible or desirable to give full coverage of these different cross-cultural practices, but some illustrative examples are of use in articulating the particular significance to our discussion of phototalk dynamics. One such example in the anthropology of food literature concerns parent–child relationships and the use of mealtimes as a site for child socialization and

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[1]The term "family" here is used in the sense of DeVault (1991/1994) to be more loosely defined as household. In this way the concept goes beyond the traditional account of the nuclear family to include the extended household network, such as uncles, aunties, cousins, friends, and colleagues.

parent–child bonding (e.g., De Geer, 2004; DeVault, 1991/1994; Dreyer & Dreyer, 1973; Laurier & Wiggins, 2010; Ochs & Shohet, 2006; Ochs, Smith, & Taylor, 1989; Ochs & Taylor, 1992a, 1992b; Ochs & Taylor, 1996). Talk, storytelling, and narrative exchange are used to socialize the child in etiquette, traditions, and shared memories and shared moral values. Of significance is the extent to which different cultures encourage the inclusion of children in the collaborative construction of narratives or the extent to which narrative responsibility lies with the father or mother (e.g., Blum-Kulka, 1994, 1997). Within these different cultural norms, children may be the *author*, *animator* (person who utters message), *principal* (person whose views are represented), *recipient* (person to whom message is directed), or *overhearer* (nonrecipient who attends to the narrative; Ochs & Shohet, 2006). Some parallels can be seen here with the organization of phototalk and in particular the shifting dynamics of audience–presenter relationship highlighted by Lindley et al. (2009). These subtle but important cultural dynamics of mealtime participation provide additional context within which to consider more open interaction opportunities for new photo display technologies at the dinner table.

Another example concerns entertaining and the host–guest relationship. The essence of entertaining is about concern over the welfare of the guests—choice of food and presentation reflect this concern (Fox, 2010). Choice of food is used for identity projection, saying something about the host and his or her particular individual style. Again cultural norms of these occasions determine the structuring and sequencing of conversational participation (e.g., Befu, 1974; Fox, 2010; Zanca, 2003). In part these structures are conveyed through choice or food and methods of serving. More formal occasions in Western cultures are denoted by host-presented servings of individual plates to those at the table. In this respect, the host takes a particular role in orchestrating the structure of the meal and the conversation. This in some sense mirrors the more formal presenter–audience relationship in phototalk arising from single user control of a photo display system (cf. Lindley et al., 2009). In more recent times, though, we have seen a shift to more informal social eating patterns with a more relaxed presenter–audience relationship, one in which there is a more even participation in the structuring of the meal. Again the material arrangement of the meal is important in conveying and enabling these particular relations. For example, the sharing of dishes or buffet-style arrangements enable a more even distribution of control among those present over the structuring of the meal. It might even include guests bringing along dishes and sharing the responsibility for the production as well as consumption of food. This in turn creates shared responsibility for social action and conversation patterns. Again we can draw interesting parallels between shared interaction around photo display artifacts compared with presenter-controlled interaction of photo media (Lindley et al., 2009).

We find further insights into the social organization of mealtime dynamics in Harvey Sacks's revealing analysis of a mealtime conversation, which centers on the requests, offers, and refusals in relation to a food being served. First is the notion of *rights* and *responsibilities* relating to the conduct of the meal and how this is played out during the meal both through conversation and action. That is, only certain

members, in light of their particular social position within the household, have the right and responsibility to ask or perform certain tasks, such as, for example, asking for more food or drink to be brought out. The second concerns how artifacts and other features in the environment come to bear on the way that talk and action are organized to mobilize social relations in particular ways. For example, the ways that repeated offers and repeated refusals of a food dish are sequentially played out by those present at the meal are not so much about the practical organization of consumption as about the negotiation of evolving roles and responsibilities within their relationship. Further discussion of the how artifacts and environmental features are used as a resource in the organization of conversation can be found elsewhere in Sacks's work (e.g., the "hole-in-the-shoe" discussion) whereby the mutual orientation to artifacts becomes a means by which things such as compliments and complaints can be "safely" constructed and introduced during conversation. These analytic concerns are important in understanding how particular ways photo artifacts are introduced during mealtime may influence the organization of talk and social action.

Our discussion of the phototalk and commensality literature helps set some context for how phototalk might play a role in occasions of shared eating. The discussion highlights parallels between the functions of autobiographical in relation to phototalk and the social functions of commensality. Similarly, there are interesting parallels in how the material properties of photo mementos and material configuration of the meal shape the organisation of social discourse and the structure of participation. Of importance is the particular ways that technology enables photo memento resources to be introduced and mobilized in the social work being conducted during shared meal in ways that is sympathetic to the occasion. It is these that we turn to now in our discussion of the 4 Photos system and its design characteristics.

4. THE 4 PHOTOS SYSTEM

The 4 Photos system (Figure 1a) is designed as a table centrepiece to situate the display of autobiographical photo mementos within the context of a shared dining experience. It consists of four portrait-oriented displays (19.8 cm × 12.7 cm, resolution 800 × 480) arranged on the four vertical faces of a rhomboid (18 cm × 14 cm at base, 13 cm × 10 cm at head, angles 105° and 75°) enabling viewing from all around the device. The height (27 cm) and width of the system were chosen to provide visibility of the display without interfering with lines of sight between those gathered around the table, maintaining natural gaze and interpersonal awareness. Photos are sourced from the respective Facebook profiles of the meal participants. Prior to the meal, the host creates a Facebook group called "Dinner" to which the Facebook accounts of people attending the meal are added. An application then scrapes the photos from the Dinner group accounts and adds them to the 4 Photos device. Sourcing content from a social networking site is low effort for the users and exploits an already-

FIGURE 1. (a) 4 Photos. (b) IR proximity sensor behind pattern. (c) Rotating head. (Color figure available online.)
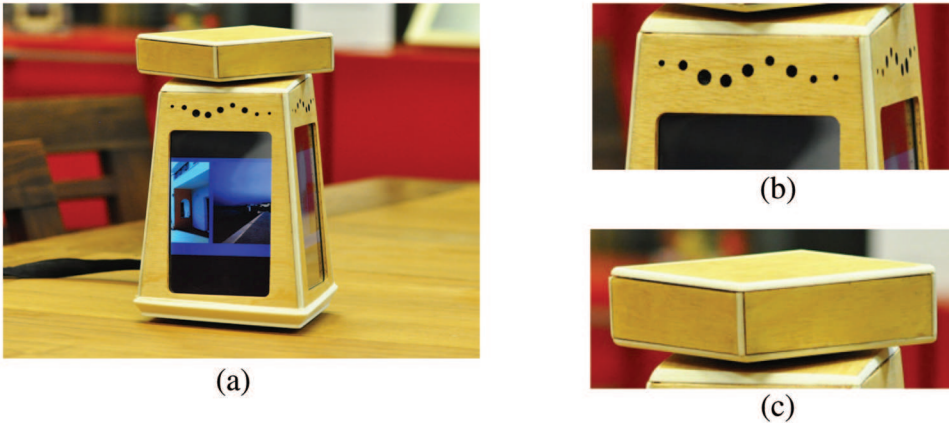
curated resource people actively use in self-presentation to their social network. The photos are presented on the system as photostrips (see Figure 2). Each photostrip is made up of up to four photographs randomly selected from a randomly chosen Facebook album of a particular user in the Dinner Facebook group. Being drawn from a particular album, the photostrip has thematic coherence according to the theme of the Facebook album—providing a focused set of personal memory cues. One photostrip is presented at a time until intervention from a user. It scrolls ticker tape style around device, with the displays being linked to form a continuous display area. At a rate of 60 pixels per second, it takes approximately 32 s for the photostrip to complete a circuit. As can be seen in Figure 1a, the width of the strip is approximately half the height of the display.

Above each display are embedded IR proximity sensors (Figure 1b). Bringing a hand close to the sensors triggers a push-to-share function. The most predominantly visible photograph on the display corresponding to the triggered proximity sensor is zoomed to fill all four screens. Bringing the hand toward the sensor again will then

FIGURE 2. A photostrip. (Color figure available online.)

Photo album name

revert back to the photostrip view. Having sensors on each side enables interaction by all those positioned around the device. A further mechanism is used to generate a new photostrip. By spinning the rotating head of the device (Figure 1c), the system cycles through the different members of the dinner group. When it eventually stops, it displays a new photostrip from an album of the person it has "landed on." Again, this mechanism is controllable by all present from all sides of the table.

5. FIELD STUDY

To the social dynamics and values arising from the design of 4 Photos we deployed the system within real settings of a shared meal. Five *host* participants were given the technology to use in a shared meal of their choice. The hosts were responsible for organizing the social gathering with family, friends, or colleagues.

- Group 1: This group comprised of work colleagues from a technology research lab having a meal together after work. There were five male and one female colleagues all between 20 and 30 years of age. Two of these were members of the research team. The meal was held in the kitchen area at the office. A range of takeaway dishes was ordered to be shared among the group.
- Group 2: A gathering of friends aged 20 to 30, three male and two female friends. Two were married and live in a shared house with another of the male friends. The other two, a couple, were guests. The meal was in the home of the married couple and third man. The meal consisted of a selection of shared takeaway dishes.
- Group 3: Family meal with husband, wife, and two young children plus one female visitor. The husband and wife were in their 30s, and the children were aged 4 and 6. The visitor was in her 20s. The meal was held at the family home and consisted of tortilla wraps to be assembled by those at the meal.
- Group 4: This was a gathering of three female friends aged 40 to 50. The daughter and son of the host were also present, aged 12 to 14. The meal was held at the host's home and consisted of a selection of cold dishes and wine to be shared by the group. Each guest brought a dish to contribute to the food selection.
- Group 5: This meal comprised a group of student friends in their 20s. One female and four male friends were having lunch at their university department. One of these students was a member of the research team. The meal consisted of sandwiches and various snacks.

Having invited their guests, the hosts set up a Facebook Dinner group made up of their guests' Facebook accounts to source appropriate photos for the device. At the time of the meal, the hosts positioned the 4 Photos display on their dining table. After a brief instruction on the basic interaction mechanisms, the meal would proceed. The hosts were given a video camera to record the meal, positioning the camera to provide a view of the whole table and the people around it. After the meal, a short debrief session was conducted with the participants to elicit feedback about the meal

and the use of the device. Although this provided some contextual understanding for our analysis of the video, we do not draw on it as a primary resource in this article. Rather, the work presented here is drawn from a detailed interaction analysis conducted on the captured video. Our concerns were with the moment-to-moment in situ organization of interaction among the group. We looked how particular sequences of action and conversation emerged and how they were shaped by the technology, the presented photo mementos and the broader ecology of mealtime artifacts. Of further interest was how these actions related to the playing out of social relationships during the meal.

6. FINDINGS

We begin our discussion by looking at how interactions with the system and autobiographical content featured in the production of mealtime talk and in the mobilization of new and established social relations—for example, in getting to know others, enabling displays of affection among family members and reflections on current and past identities. We consider how particular features of the 4 Photos design enabled participation in talk, overcoming asymmetries and providing more equitable opportunities to contribute and construct particular social values as presenters and audience. We discuss also how this relates to management of the social pragmatics of the shared meal, drawing particular attention to host–guest and adult–child relationships. Finally we consider the social values of contributing consumption resources for these settings and how these extend from bringing food gifts to "bringing" autobiographical content.

6.1. Contribution to Dinner Talk

The construction of narrative around photo mementos is well documented in the literature. In this section we elaborate on specific ways this and particular features of the 4 Photos device contribute to particular social relationships and social functions of the meal settings. Of significance in the different meal settings are the different types of personal relationships among the group members. In consequence, different kinds of functions of autobiographical memory come into play in each setting, reflecting the different kinds of relationships being established and maintained.

Getting to Know Others

We begin by looking at how the personal memory cues are used in *getting to know* others at the meal. A number of functions of autobiographical memory are pertinent here—relating to identity management; friendship formation; and establishment of likes dislikes, values, and so on (Cohen, 1996; van den Hoven & Eggen, 2008). Let us

consider an example from Group 1 where, although work colleagues, the members are not all well acquainted in the social context outside of work. Several of the meal participants had recently joined the organization, whereas others had worked there together for longer. Presenting the photo mementos provided opportunities for the photo owners to introduce information about themselves, as well an opportunity for social inquisition. This is seen in the following snippet in which a family photo is displayed.

> P: "Ah—there's my daughter"
> J: "Oh I didn't realize you had a daughter"
> P: "Yes I have two. X is 1 and a half and Y is three and a half."
> J: [referencing the photo] "Which beach is that?"
> P: "It's in Spain"
> J: "Where in Spain?"
> P: "It is . . . My husband's parents have an apartment there."

As the conversation is happening, P reaches out her hand to the proximity sensor to send the photo to all four displays, to pause it and show others. As she finishes talking she moves her hand to the device, which reverts to the photostrip. Another photo from the collection comes up on the device that is of P's husband, to which she comments, "There's my husband." What is important here is not simply the cue to the past. Rather, in line with the arguments of Sacks (1992), the photo mementos are providing a resource to which those at the table can mutually orient to in the development of conversation. This is not simply a question of suggesting topics for discussion or animating the social but rather is a means through which information of personal significance can be understandably introduced into the conversation— a means through which participation is enabled. Similarly, it provides a resource to respond and find out more. Again, this is not simply an issue of gaining further information but an opportunity through which J can express interest in what P is saying. These reciprocal expressions form part of the process of bonding between those present. Interactions with the device were also used to similar effect. In the subsequent use of the sensor to send the photo to all four displays, P's action facilitates the mutual orientation to the resource to include the other members around the table—a visible act of social politeness. In a further episode, a photo of a fish was displayed but without comment. The photograph's owner was one of the quieter and less confident members of the group. The uncertainty over who owned the photo was used to invite the person into the conversation with the comment: "Whose are the Fish?" This was not just a request for information but a nuanced way to encourage participation without awkwardly drawing attention to the particular individual's lack of participation.

It is important to note that conversation arising from the personal memento displayed was not simply tied to the details of the event depicted but rather evolved along a natural trajectory of conversational associations. People used these personal memory resources to relate the narratives of others to their own personal experiences

and memories. Likewise, they created opportunities for more general discussion of related subjects, during which the device and photographs receded into the background. For example, in Group 1, one member recounted a narrative around a trip to Spain depicted in his photostrip that included a picture of a bullfight and a photo of La Sagrada Familia, the Gaudi Cathedral in Barcelona. The narrative began with a story of how he had to leave the bullfight because his wife was upset watching it. Another member, H, jokingly asked whether they ate the meat after they had killed the bull, through which he invited the group into a more serious discussion around this topic, allowing others to reveal attitudes and values toward this. The photo mementos were not simply a resource for discussing and relating experiences to the past but also a mutually understandable means through which expressions of taste and values could be safely made.

Shared Reminiscing

Such conversational exchanges and functions of autobiographical memories were also seen in meals with friends and family, but within these groups, additional social work was exhibited through the narratives reflecting the more established relationships. Within these groups, the photos became resources for reminiscing talk (Frohlich et al., 2002) arising because of shared participation in depicted events or common sets of friends and family members depicted. For example, in Group 2, their common affection for a mutual friend was played out as a photo of the friend [M, not present] was displayed.

> P: "Look at M—what a Dog." [smiles and laughs]
> S spins the top again and another photo comes up again with the same friend in it.
> P: "Msy again – Msy's everywhere."
> T: "Ubiquitous Ms"
> All: [affectionate laughter]

Likewise, in Group 3, as a photostrip of a family trip to London was displayed, their visit to see *The Lion King* was mentioned. The guest, K, replied:

> K (guest): "Oh you went to see *The Lion King*."
> L (Mum): "It's great, isn't it."
> D (daughter of L): "Yeah, as a birthday treat."
> K: "Oh really, lucky you"
> D: "I love it." [glances from K to L and back to K]

Of significance is not simply the recounting of the event but the opportunity for expressing and understanding the importance of it to other family members. The daughter used it to say how she was made to feel special by the birthday treat and how much she loved it. Although the utterance was directed at the guest, it was also

intended for her parents, reaffirming that they had made her feel happy and special on her birthday.

Displays of Affection and Reinforcing Family Ties

One of the key purposes of sharing a meal is to help reinforce family bonds. In the following snippet (see Figure 3), we see how photo mementos were mobilized to this end.

> Picture of OW (son of L and M) comes up on his screen at which the children point and laugh.
> OW: "It's me with two tomatoes in my mouth. Look Mum, it's me with two tomatoes in my mouth."
> M (Father of OW): [leans across to see the photo on OW's screen.]
> L (Mother of OW): [smiling] "Oh is it that one. Ah, I love that one." [See Figure 3].
> OW: "Look K [guest]." [OW points at the picture].
> M: "Where was that one taken?"
> As OW points the sensors are triggered sending a photo of OW playing the piano to the displays.
> OW: [pointing at photo trying to get K's attention] "Look K."
> K: [attention engaged in folding a tortilla, then looks at display] "Ah little OW playing the piano."
> OW: "Playing the piano."
> L: "Nanny's piano." [in childlike voice used typical of adult to child speech.]

A number of things are taking place here. First, the parents validate OW's role as presenter through acknowledging glances at the display. The mother also uses the memento as an opportunistic *display of affection* to OW as she smiles at him and tells him how she loves the photograph—an expression of how much she loves him. We see too how the memento is used by OW to draw attention to himself from guest

FIGURE 3. Display of affection by mother. (Color figure available online.)

K. Through reference to the photograph and the depicted event, K is able to play out her social relationship with OW. K's actions are also an important feature of her relationship to the hosts, who are the parents of the child being commented. Of further significance is the broader attempt to highlight and *reinforce family ties*, in the way the mother qualifies the conversation and introduces "Nanny" [not present] highlighting Nanny's importance.

In other examples of how the photo mementos came to be socially deployed, the concerns were not so much with specific details of the incidents and the past. Rather, they were invoked in ways that related to more abstract notions of relationships (cf. Petrelli et al., 2008). For example, in Group 3, a photo of M (father) holding OW (son) appeared. L (mother) affectionately smiled and commented how much she liked it. Through this action she expressed the importance of her son and husband and the represented relationship between them. This was both a display of affection as well as a reinforcement of values to the children of the importance of family relations—contributing to an ongoing process of bonding and social learning during the meal.

Social Expression Through Reflections on Past and Current Self

An interesting way that photo mementos were used during the meals involved contrasting current notions of self-identity with representations of the past identity (cf. Petrelli, van den Hoven, & Whittaker, 2009). The significance of this was not so much in the contrast itself but in the ways the contrasts were mobilized to achieve particular social effects. In one episode, a participant, on seeing an old photo of herself, remarked in a self-deprecating and humorous way about it being a time when she wasn't so fat. The photo memento, here, was oriented to in a way whereby here emotional concerns about her current self could be "safely" (cf. Sacks, 1992) introduced in to the conversation. Without this resource, the introduction of such a topic might appear overly neurotic. In another example, a mother (L) used a contrast to highlight to her son (OW) his development and progress.

OW: "That big slide that me and mommy went on."
L (mum): "That's the one you wouldn't go on last year."

The photo memento here enabled the mother to perform important parenting work.

Managing Topic and Identity

Bringing Facebook photos into these contexts was not without concern arising from a potential mismatch between the intended online audience and the audience at the meal. For example, J, from Group 1, sharing a meal with colleagues, commented, "I hope there is nothing embarrassing on there." The father in Group 3 expressed similar concerns as to whether his content would be appropriate for the children. In these

instances, the concerns were not played out in ensuing conversations. However, the potential for embarrassment in these socially different contexts was seen in Group 2.

A picture of SH on the beach comes up on the display. One of the male individuals, P, reaches toward the display to trigger the zoom function. When it zooms in, it shows a close up of her legs and everyone goes "woooh" and S starts singing a striptease theme. SH then signals her mild embarrassment by spinning the head to bring up a new photostrip.

Although there is potential conflict, what is more important is how these are oriented to in the conversation in terms of delineating what is appropriate and not appropriate. Some related issues arose in relation to photo mementos of narrow topical interest. For example, in Group 2, one of the male individuals had an album of mountain-biking-related photos. When these were displayed, only a subset of the men in the group was interested. S, the partner of the one male individual, noticed this was exclusionary and not conducive to the broader group dynamics and commented, "Why does it end up on bike porn?" This highlighted her concerns and invited it to be moved on.

Managing Participation and Conversational Asymmetries

> P: "It's about everyone rather than one person's photo."

As noted in the literature (e.g., Frohlich et al., 2002), there are various asymmetries in phototalk arising out of ownership of the memento and interaction opportunities afforded by the representational media. Such asymmetries are not so conducive to the shared conversational sensibilities of a mealtime gathering. By bringing in photo mementos from multiple Facebook accounts of those present and with more distributed interaction control opportunities, the 4 Photos device enabled more symmetric opportunities for participation—leading to a constant shifting of audience–presenter roles throughout the meals. This in turn allowed the personal memory resources to be mobilized for particular social effect by all present both as audience and presenter, distributing responsibility and opportunity. Indeed the ethos of sharing was oriented to in very explicit ways as the following episode from Group 2 illustrates:

> S spins the device head and it comes up with an album from SH, the same person as before.
> S: "Oh SH you are popular."
> M on the other side of the table intervenes without saying anything and spins the top again to get something new to come up.
> A short while later, it comes up with SH's photos again. This time SH nudges the top onto the device to move on to the next person's album.

What we see here is how interventions by both M and SH are used bring up a photo memento belonging to someone else. In this way, they reveal their concern

for the conversation not to be dominated by one particular member and offer up the floor to another by shifting ownership of the memento displayed. Interactions such as this were used to offer the floor in the conversation, take the floor, to express interest and disinterest in a particular issue, and facilitate sharing. In our observations of the various settings, everyone at some point initiated interactions with the device to manage conversational participation and control. These interactions were an integral part of the ways the photo mementos were used to shape and control *storytelling* and *reminiscing* with particular social effect during the meal.

6.2. Phototalk and the Social of Mealtime Pragmatics

Mealtime events comprise a trajectory of activities that unfold and evolve throughout the course of the meal. This requires certain work to enable the meal to run smoothly. For example, preparing and monitoring food as it cooks, bringing in food and drink to the table as required, offering dishes to guests, passing dishes across the table, serving up the food, helping children to eat, and so on. As Sacks (1992) highlighted, there is particular social nuance to the ways that these pragmatic concerns are enacted with social significance beyond their immediate practical concerns. In particular, there are certain rights and responsibilities associated with these acts as hosts, guests, and family members and particular ways that they are used to mobilize social relations. Attending to the social aspects of mealtime pragmatics can demand attentional resources of both hosts and guests alike and this has particular implications for how photo mementos and responsibility for phototalk are deployed and managed in these settings. In this section, we consider some ways that the participants oriented to these issues in relation to 4 Photos and the roles played out as hosts, guests, parents, children, and friends. The key point about all these examples is to highlight the important social and practical demands of these occasions of commensality. Attending to these demands draws on both attentional and physical resources of the individuals concerned and impacts on their in-the-moment abilities to manage the responsibilities of phototalk. What we see in the four examples are ways in which other members of the group seamlessly assume control of the device and responsibility for phototalk as others shift their attention to the social and pragmatic demands of the occasion. After presenting the examples we go on to discuss in further detail the properties of the device that enabled this shifting of responsibility between phototalk and management of the meal.

1. In Group 4, the hostess, C, at several points throughout the meal, needs to get up from the table. On some of these occasions, it is to go to the kitchen, for example, to place a dish in the oven to warm up, then again to retrieve the dish from the oven to bring it through to the dining room, and finally to make some cups of tea that she has offered her guests at the end of the meal. On another occasion, she also needs to get up to reprimand her children, whom she has sent up to bed earlier but hears that they are still awake and messing around.

During these times, the guests are able to continue interaction with the device and the cued personal memory-related conversations.

2. In Group 3, the mother of the family notices that the guest is being polite and not helping herself to food without the appropriate social signal. As such, the mother picks up the bowl of tortilla filling and offers it to her guest, who then proceeds to accept it and begin preparing her food. These are significant acts of etiquette on the part of the host and guest that are part of the ongoing management of the meal. While she is doing this, the others around the table continue interaction and conversation around the device.

3. In Group 3 again, we also see further pragmatics of the family meal with children and the physical and attentional resources on the part of the parents playing the supporting role. "Shall I just hold it while you have some," the mother says as she hands the bowl of tortilla filling over to her young son (OW). OW can't hold and serve himself at the same time, so the mother holds the bowl while OW scoops out some filling and spreads it on his tortilla. OW then exclaims, "I can't roll it up," at which time he point his father, sitting next to him, who intervenes to help OW prepare his tortilla. During this, interaction with the device and deictic referencing of the photos during the course of the conversation continues.

4. A final example can be seen in Group 2. Within this meal setup, the takeaway dishes placed around the table are to be shared by everyone. Throughout the meal people help themselves to the dishes and serve themselves when this is practically achievable. There are times too when they are unable to reach things and need support from others who can reach. In these instances, the other members will lift and offer the dishes across the table. These are important social exchanges that need to be choreographed with the ongoing talk and interaction. But as we saw with the other examples, interaction with the device and ongoing photo-related talk are able to continue. More specifically illustrated in Figure 4, participant T reaches across to grab a dish of rice while participant M reaches out to spin the device head.

FIGURE 4. Serving food and interacting in synchrony. (Color figure available online.)

In light of these examples, what features of the device, and more broadly the socio-technical context, are being oriented to in enabling this shifting of responsibility (both giving it up as well as well as taking it up). In part, this arises out of the multiple access points for the device in terms of display orientation and interaction control mechanisms. In contrast to a laptop, where the device orientation evokes a practical and social sense of ownership and control, the 4 Photos device is orientation neutral. This then does not confer any sense of prioritized ownership and control with respect to the particular seating positions around the table. Likewise, the interaction mechanisms themselves do not confer any particular proxemic advantage to those positioned around the table. What we observe in these examples is how, during periods where individuals are occupied with other social and pragmatic considerations of commensality, others continue to interact with the device. This distributed responsibility for the production of the photographic memory cues as resources for conversation arises not just out of the interaction mechanisms themselves but also out of the distributed ownership of the content. This has important social consequences on both sides of the audience–presenter relationship. So not only does it distribute responsibility and opportunity for initiating interaction and phototalk, it also distributes responsibility for being an attentive audience member. With a single owner of the content, there is a strong moral imperative to attend to the presentation and personal memory narratives being undertaken. With distributed ownership, this moral imperative is mitigated in that the acts do not single out the content and personal memory narratives of particular individuals. In this way, distributed ownership of the content can make it socially easier to temporarily withdraw from the presentation to attend to the other important concerns of commensality. Thus, for example, the host was able to withdraw to the kitchen or attend to the social and practical demands of children and guests.

6.3. Children and Socialization

As discussed in the literature, mealtimes are an important site for the adult–child relationship, in terms of child socialization and parent–child bonding. Talk and narrative exchange are part of the ways that children are socialized in etiquette, traditions, shared memories, and moral values. The nature of child participation in these narrative exchanges is subject to subtle cultural and behavioral norms according to the particular social context of the meal. In this section we explore how these bonding and socialization processes are played out through interactions with 4 Photos. Consider an example from Group 3 in which multiple interaction access points provided an opportunity for child participation. At the beginning of the meal, the mother goes to make the first interaction with the device, reaching across to spin the head. Just before touching it, she withdraws her hand and says, "Do you want to spin it CH?" CH, her daughter, is shy and, not wanting to go first, shakes her head. The mother continues her action and spins, at which point the younger son, OW, says, "I wanted to spin it." The mother apologizes. Moments later, CH sheepishly asks, "Can

FIGURE 5. Managing interaction conflicts among children. (Color figure available online.)

I spin it?"; the father tells her to "Go for it." As she reaches to spin the device, the young son stands on his chair and simultaneously reaches over to spin the device. The father, noticing this, moves his arm in an attempt to block OW's hand and says, "Hang on, hang on. Oi oi" (see Figure 5).

A number of significant things are happening in this vignette relating the parent–child relationship. The first concerns the invitation for the daughter to interact in which the parents and children are orienting toward particular *rights* and *permissions* to interact. In this we see a demonstration of polite encouragement for the children to participate in the narrative production. This invite is both a gesture of caring and the means by which the children can learn appropriate etiquette of sharing resources (cf. food sharing). This demonstration of sharing etiquette extends to the rest of the interaction where there is conflict between the daughter and the son's interaction attempt. The daughter, having politely asked, is given preference; the father's block of OW demonstrates his orientation to what is appropriate sharing. A further issue concerns the standing and reaching behavior of OW in order to reach the device. The father does not consider this appropriate behavior at the dining table, and although not immediately challenged, it is noted and dealt with later on in the meal when the behavior is repeated. We see, then, how the interaction proxemics of the device encourage certain behaviors conflicting with good manners, needing to be managed as part of child socialization.

These issues continued into the meal with the young son, OW, persistently wanting to interact with the device to see new photo mementos. Although at times this was deemed appropriate participation, there were occasions when this interfered with the ongoing memento talk. The interactions by OW changed the photo cues displayed, taking away the conversational resource and the ability for deictic reference to the content. In the following episode, guest K is recounting a personal memory narrative about one of her photos being displayed. As she is talking OW reaches to spin the device.

> L [mother]: "No, not yet. Don't touch it because we haven't seen these ones yet
> …"
> OW spins the device anyway.
> L: "OW you've got to stop."
> OW: "But I like it."
> L: "I know you like doing it but we want to see the photos."
> [Children laugh]
> L: "Was that a glass of cream or something?"
> K: "It was a coconut."

These behaviors from OW proved frustrating for the parents who made similar interventions throughout, with sighs of frustration, apologetic glances, and direct interventions. What is pertinent in the previous vignette is the involvement of guest K. The interruption by OW of her recounting her memories is seen as particularly impolite. In making these interventions, the parents orient both to their responsibilities as parents and those as hosts. They visibly demonstrate their appropriate parenting to the visitor as well as a welcoming concern to the guest through the invitations to continue the conversation.

6.4. Contributing to Commensality

As we have seen in the literature and findings, commensality is not simply a collaborative act of nutritional consumption but is a socially nuanced site of complex social exchanges, rituals, and moral obligations. Such social exchanges not only occur simply within the immediate bounds of the consumption activity itself but also are seen in preparation and contribution of consumption artifacts to the meal. For example, in Group 4, one guest had prepared a cake to bring to the meal, whereas another brought along some nibbles. These acts have social significance for the host–guest relationship. On one hand, they are acts of reciprocity on the part of the guest shaped by etiquette norms for these settings. But they are also a means by which the host, in accepting these acts, constructs a particular social dynamic for the meal—a welcoming invitation of guest participation.[2]

Such behaviors and social values extended also to behaviors around 4 Photos and the provision of autobiographical photo mementos to the meal. Inviting the Facebook accounts of guests is an explicit gesture for the guests to have more equal participation in the use of photo mementos at the meal. More significant for our purposes are how this enabled opportunities for guests to *actively* contribute to the provision of these cues. Rather than simply a passive deferral to the existing photos within a particular Facebook account, there were also deliberate behaviors by particular guests to add more photos to their accounts because of their prospective use at the meal. These contribution opportunities then are important ways that the photo mementos can be

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[2]This can be contrasted with other possible social dynamics in which the host assumes more complete control over the provision of consumption artifacts. The issue here is not that one is right or wrong but that through these acts, the particular social dynamic of the host–guest relationship is constructed.

mobilized in the host–guest relationship. For example, we see a particular expression of moral obligation around these contributory behaviors illustrated in an excerpt from a guest in Group 4. Being aware she had contributed fewer photos than the other guest, she remarked, "I was going to put a few more Spanish photos on today but I just ran out of time. I thought what does she [hostess] want, more photos or cake?"

What we see in this, then, is the need on the part of the guest to account for her lack of contribution. Rather than this being taken as a social affront in terms of her lack of social effort, she makes reference to the fact that she contributed in the form of a cake. The provision of autobiographical photo content by guests, then, becomes another site through which important relationships and social meaning are played out.

7. DISCUSSION AND CONCLUSION

In this article, we have explored ways in which autobiographical photographic mementos come to be invoked in real-world social settings of shared eating. Rather than dealing with personal memories as simply a turn to the past, our analysis has built on Petrelli et al.'s (2008) argument that photographic mementos are actively consumed in the course of ongoing social activity. What is important, then, is that personal memories and photo mementos come to be used as resources mobilized in certain ways for particular social relations. Our aim in developing 4 Photos was to provide a means by which these personal memory resources could be invoked within the context of the social work being done at a shared meal. The issue here is not simply one of prompting conversational topics or *animating* the social as though it would otherwise not exist. Nor is it simply about cuing personal memories and reminding people of interesting events to discuss during a meal. Rather, they enabled mutually understandable ways for people to assume particular roles and responsibilities at the meal, as hosts, guests, family, friends, and colleagues. The memento resources provided opportunities to present and talk about themselves and their interests, values, and attitudes; express interest and inquire about others; show empathy; and highlight the significance of peers and people that tie the group together through kinship, friendship, and other connections. They enabled those present to "safely" offer compliments, express affection, discuss insecurities, and offer support.

Designing the technological means to invoke personal memories artifacts within these social settings of commensality is nontrivial. There is a rich set of culturally specific norms, behaviors, rituals, etiquette, rights, and responsibilities appropriate to the particular group compositions important to the organization of discourse and social action within these settings. Designing for this space needs to be done with sensitivity to these concerns as well as the more pragmatic aspects of consumption that accompany them. Our approach with 4 Photos was to open up the interaction access to all those present at the meal. The aim here was to enable all to participate in the invocation of photo mementos for particular social effect within the bounds of their

particular rights and responsibilities at the meal. This began with the shared sourcing of content from the photo repositories in Facebook accounts of participating members. In itself, this enabled host–guest work to be done, for example, by conveying a welcoming social message about the atmosphere of open participation in the meal or though the particular contributions of the guest to the photo resources. Perhaps more important, though, it shifted the balance of ownership of the personal memory content to others at the meal. Given the importance of memento ownership in phototalk dynamics and rights as audience or presenter, this design overcomes asymmetries involved in traditional phototalk enabling all to invoke mementos for appropriate social effect during the meal.

The open access was also seen in the multiple entry points for interacting with the device—both in the spinning head and the multiple proximity sensors for zooming and coordinating the displays available from all sides of the device. Again, this was important for the particular ways personal mementos could be invoked in the mobilization of social relations at the meal. These values arose from the distributed *opportunities* for participation as well as distributed *responsibility* for it. In the findings, then, we saw a constant shifting in the presenter–audience relationship around the photos and personal memory narratives with different people assuming different roles throughout the meal. It was through this distribution of responsibility for these items and interactions that other practical aspects of the meal could be accomplished, such as the serving and consumption of food or attending to other manifestations of the host–guest relationship or adult–child relationship. Such open access, though, was not without some difficulties as seen in points of control conflict. We saw issues in particular with respect to some of the inappropriately timed interactions by children. It is worth noting here, though, that these were socially managed within the culturally accepted norms of child participation. So the open access enabled parents to include the children in the photo narratives to the extent they deemed appropriate. When problems arose with overuse, distraction from eating or interrupting conversations, the interactions became another site around which child socialization behavior and etiquette learning were played out.

What we have seen here is how in light of parallel motivations, values, and social dynamics underlying both phototalk and commensality, they can be brought together effectively to enable the social work conducted in these settings. In saying this, we would not want to make the claim that the device would make sense in everyday use at the dinner table. Rather, such a device and its presentation of personal memories is better conceived as a resource with which people might design and construct settings of commensality with specific social effect in mind. We also hope to have highlighted how phototalk and personal memory narrative exchange are shaped by the particular settings within which they are immersed as well as contributing to the social work undertaken in them. This has implications both for how we consider the values arising from it and how we go about designing for it. Furthermore, beyond our particular concerns with 4 Photos the findings point to broader implications for how to think about settings of commensality and considerations for technology design within these contexts.

NOTES

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