Accessing Children's Perspectives Through Participatory Photo Interviews

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Abstract: In this article we seek to contribute to the emerging conversation on child-centered research methods by reflecting on the use of participatory photo interviewing to understand children's experiences with household technology. Participatory photo interviews attempt to engage children as active research participants by giving them cameras and inviting them to take pictures dealing with various aspects of their lives. The photos are later used in the interview process to jointly explore the subjective meaning of the images. We focus here on how children oriented to the research task, and in particular, on the ethnographic insights obtained by attending to the different kinds of commentaries evoked as children were asked to explain their photographs. Our experience with this image-based approach suggests that children's reactions to the research context complicate the task of interpretation but are essential to acknowledge if researchers are to make full use of the potential of photo interviews.

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1. Introduction

Scholars who seek to understand children's lives and experiences are often challenged by the asymmetries of age, size and verbal skill between themselves and their respondents. To bridge these social and communicative distances, researchers have, increasingly, embraced innovative approaches such as drawing, mapping, diary-keeping, photography, and video-documentary. Such task-based activities, which engage young people as active participants in the research process, are not only more fun for children than traditional methods, but they are also believed to enhance the child's ability to communicate his or her perspectives to the adult researcher "at the point of data-gathering" (HILL, 1997, p.180), and thus hold the potential to impart more authentic understandings of

children's lives as they are lived (GREENE & HOGAN, 2005; BARKER & WELLER, 2003; KUHN, 2003; PUNCH, 2002). [1]

Many of the most imaginative efforts have been inspired by an interdisciplinary framework in childhood studies that conceptualizes children as competent social performers whose experiences may be structured through systems different from adults (CHRISTENSEN & JAMES, 2000; PROUT & JAMES, 1997; AITKEN) & WINGATE, 1993; CORSARO, 1985). The "new social studies of childhood" seek to understand the meaning of children's present lives rather than to identify normative patterns of child development. However the efforts to authenticate children's voices through the use of more collaborative and child-centered techniques have also generated concerns about the implications of the methods for the production of research findings. As scholars reach a new appreciation of children's distinctive ways of attending to the world, they also confront questions about how to ground the authority of their knowledge claims given that the children, as research participants, inevitably display an orientation to the research process itself (EMOND, 2005; BARKER & WELLER, 2003; PUNCH, 2002). As childhood researcher Peter KUHN (2003, p.6) explains, "[t]he subject [matter] depends on whether I observe or interview children or give them other opportunities to express themselves with regard to my assumptions," or put more simply, "methods constitute their subject" (OSWALD, 2000 in KUHN, 2003, p.6). Although child-centered methods may offer a more congruent choice than traditional interview techniques for apprehending children's lifeworlds, they also present interpretive challenges insofar as the meanings of the responses are contingent on *how* children construe the research task and *how* they react to the researcher. [2]

In this paper we explore such constitutive features of the research context by drawing on our experience using participatory photo interviews to understand how children's competence with information and communication technologies is constructed within the family. The primary research tool was auto-driven photo interviews, in which children were given disposable cameras and asked to photograph themselves or family members at home working or playing with technology. These pictures were later used in one-on-one interviews to explore in a collaborative fashion the subjective meanings of the images. Our experience suggests that the data generated through an image-based approach were different from, but complementary to, material elicited by means of a more traditional questionnaire technique. In particular, still photography and photo interviews were well suited to capturing certain tacit qualities of the family-technology relationship, including sensory dimensions of life in a technology-saturated home as well as issues of access and boundary-management that might not come to light in written surveys or more traditional "words-alone" interviews (CLARK-IBANEZ, 2004). However, photography also presents unique interpretive challenges because the images derive much of their significance from the circumstances in which they are produced (KOLB, 2008; RADLEY& TAYLOR, 2003; see also PINK, 2005; BANKS, 2001). Even though photographs seem to present straightforward empirical truths, children's image-making is shaped by such factors as their skill levels, by conventions of pictorial representation, and

also by children's interpretation of the research task. We endeavor to show how these aspects of the data-gathering context are essential to acknowledge if childhood researchers are to make full use of the potential of photo-elicitation. [3]

2. The Research Context: Children and the Technological Environment

Technologies are full of meanings for the family members who use them. In recent years, researchers working within such frameworks as media consumption, human computer interaction, critical geography and related disciplines have made clear the importance of social and familial context in the construction of technological meanings (HOLLOWAY & VALENTINE, 2001; LIE & SORENSEN, 1996; VENKATESH, 1996; SILVERSTONE & HIRSCH, 1994). In contrast to the assumption that technology produces inevitable effects whose impact will be comparable in all situations, the social shaping of technology perspective holds that users (both children and adults) "domesticate" technologies by bringing into play their perceptions and interpretations of what the technologies afford (DOWNES, 2002). According to media researcher Sonia LIVINGSTONE (1994), how users construe the environment and its contents, particularly information and communication technologies such as televisions, telephones, computers, and other entertainment media holds implications for the individual's experiences of "potency or passivity," "frustration or satisfaction," feelings which, in turn, may underpin a desire to try to negotiate new, more autonomous positions in relation to technology or to simply maintain the status quo (LIVINGSTONE, 1994, p.114). More recently, LIVINGSTONE (2002) noted that the traditional family hierarchy is subject to pressures from the increasing pace of modernization. This trend has given rise to an emerging area of research on children's negotiation of "maturity" through the construction of technological expertise. Children are gaining access to computers and other media at an early age and acquiring skills that sometimes exceed those of their parents (HOLLOWAY & VALENTINE, 2001). Such changes have the potential to disrupt the traditional generational dynamics of teaching and learning as children take on the role of technology experts helping their parents cope with conditions of accelerating change (see also FACER, SUTHERLAND, FURLONG & FURLONG, 2001; KIESLER, ZDANIUK, LUNDMARK & KRAUT, 2000). Yet as LIVINGSTONE (2002) observes, the empirical evidence of these changes remains sparse. Furthermore, it tends to focus on high schoolers and young people in their mid to late teens. [4]

Building on this earlier work, our research explored the experiences of a younger age group whose technology practices are less well understood: middle-school aged children between the ages of 11 and 13. By analyzing children's views on the social organization of domestic technologies-in-context, we sought to understand how their technical competence is communicatively constructed within the family. [5]

3. Methodological Considerations in Researching Children's Home Lives

In searching for methods that would allow us to get at the dynamics of technology use in the family, we were guided by two interrelated concerns. We were conscious of the fact that the home, as a private setting, does not readily open itself to outsiders. We were also aware of the vulnerability of children to adult-child power inequalities in the research setting. Attempting to gain access to the family's day-to-day domestic affairs from children's standpoints complicates research within the home environment because adults to a large degree control the conditions under which any study of children's home life can take place, including the time and length of research visits and even the role children are expected to play. Preserving children's confidentiality is problematic if parents insist on being present during interviews in the home to supervise the questions or to ensure the children's helpfulness to the researcher (BARKER & WELLER, 2003; VALENTINE, 1999). [6]

As a solution to some of the challenges of home-based ethnography, media researchers SILVERSTONE, HIRSCH and MORLEY (1991) have argued for the use of "space-time oriented" methodologies, which are not dependent on the researcher's physical presence in the home. Such procedures, including time-use diaries, household maps and interviews, allow for recording of the particularities of specific moments in time and space and thus are sensitive to relationships between family behavioral routines and the home's physical geography. Though not grounded in participant observation, such methods have proved to be effective in uncovering the meanings that family members attach to various devices including the interactional expectations associated with them (SILVERSTONE & HIRSCH, 1994). Photography generated by informants offers similar advantages in that it has the potential to capture specific moments, including everyday processes and events that might be considered trivial and therefore easily forgotten. Photographs have the capacity to provide "a degree of tangible detail [and] a sense of being there" (PROSSER & SCHWARTZ, 1998, p.116) thus enlarging empirical understanding of children's lives and activities in the domestic sphere. [7]

We chose a form of self-directed photography known as participatory photo interviewing (KOLB, 2008) or photo-elicitation interviewing (CLARK-IBANEZ, 2004; HARPER, 2002). Also referred to autophotography (ZILLER, 1990; WORTH & ADAIR, 1972), or photovoice (WANG, LING & LING, 1996) this method invites participants to take photographs dealing with various aspects of their lives; the photos are later used in the interview process to explore in a collaborative fashion the subjective meanings of the images. In our case, children as photographers must "manufacture distance" (HEISLEY & LEVY, 1991), selecting and emphasizing aspects of the physical environment in the process of picture-taking. By inviting participants to make their environments meaningful to an adult researcher, auto-driven methods afford opportunities for tacit knowledge to emerge (KOLB, 2008). [8]

In previous studies, self-directed photography has sometimes been used to capture the mundane interactions of children's daily lives, with the aim of uncovering meaningful content areas that, from an adult viewpoint, might be overlooked (AITKEN & WINGATE, 1993). By preserving the connections between activities and the geographical and social milieus in which they are situated, the method affords an ecological understanding of children's lives, and has come to play a key role in various studies of child-environment relationships (MIZEN, 2005; CLARK-IBANEZ, 2004; RASMUSSEN, 2004; ORELLANA, 1999; AITKEN & WINGATE, 1993). Photo interviews have the additional advantage of fostering rapport and easing the strangeness of a one-on-one encounter by giving respondents something tangible to focus on (CLARK-IBANEZ, 2004). [9]

4. Research Procedures

Researchers who have used auto-driven photo-elicitation interviews suggest that institutional support, for example, from schools, hospitals, or community centers, is vital to the research process (CLARK-IBANEZ, 2004). The current study was carried out in partnership with a private middle-school in the southeastern United States. This school considered information technology instruction to be integral to its curriculum and viewed the research project as an opportunity to assess indirectly the long-term impacts of its technology initiatives on children's lives at home. The advantage of this partnership for us was that it facilitated the recruitment of study participants. At the same time, we recognized that a private school may have included students who have greater-than-average technological fluency; thus, the choice of setting could have played a role in the research participants' orientation to the research topic, thereby shaping the nature of our methodological insights. [10]

To recruit participants for the project, we obtained approval from the school principal to send a letter to families in which we explained the aims of our project: to understand how children and their families are responding to the increasing availability of information and communication technologies in the home and to explore the specific role that children might play as family technology "experts." Once parental consent was obtained, we administered a one-page written questionnaire to forty-eight children in their classrooms. The purpose of this questionnaire was to explore children's roles as self-identified family technology experts. The questionnaire asked whether children provided help with technology to other members of the family, and for those who answered "yes," to describe the kinds of help they provided to parents and siblings. Although such paper-and-pencil responses do not necessarily give unproblematic access to the objective content of children's lives, we felt their answers could be revealing of the extent to which children see themselves as able to help others with technology, thus providing context for the photographs and interview data. In the second phase of the study we met with smaller groups of students to explain the process of self-directed photography. These groups were selected according to grade level for reasons of scheduling convenience. Due to absences, only forty of the original forty-eight children participated in these sessions. We gave each of these

children a 35 mm disposable camera and asked them to return it to school within one week. Our instructions were to

> "take pictures that show how you and your family use technology around the house. For example, you can show how technology is used for working or for playing or whether there are any special or unique ways your family uses technology. Your pictures might show how children use technology differently from adults." [11]

We told the children they could take as many or as few pictures as they wished. For this phase of the research we defined "technology" broadly, saying that the term conveys different meanings to different people and can include fairly ordinary objects as well as high-tech devices. [12]

In research with children and young people, issues of consent loom large. By following a process in which children had to "opt in" to the study rather than having to opt "out," our goal was to minimize pressures to participate (VALENTINE, 1999). We made clear that they could keep the cameras even if they chose not to take pictures. Twenty children returned the cameras but in four cases, the photographs could not be processed due to faulty equipment. The remaining sixteen sets of pictures were developed resulting in a corpus of 229 images. In the final phase of data-gathering, we returned to the school with the pictures and conducted one-on-one interviews at lunchtime in the school workroom where there was a table large enough to spread out each child's set of prints. We began the interviews with a general question, asking respondents how they decided what to photograph. Then we took each picture in the order it was taken and asked the respondent to tell us about what was being photographed and what significance it held. Overall we tried to maintain a free and natural conversational flow, allowing children to choose their own relevancies and level of detail while sometimes asking for further explanation about elements we found to be of special interest. The interviews, lasting approximately forty-five minutes, were tape-recorded and transcribed with the children's permission. Participants were given a pseudonym to be used in the transcription to protect their identities. [13]

Our analysis relied mainly on the juxtapositioning and comparison of photographs with their accompanying interview narratives. However as a first step, we scanned the pictures alone to develop broad categorizations of their manifest content: for example, pictures showing only objects versus those showing people (either "in action" or posed in portrait-style images), and pictures showing multiple devices versus those with a single object as the focus. We also looked within each set of photographs to try to see if we could discern a "distinctive pattern of seeing" (WAGNER, 1979) by each child. The photographs were then numbered so that they could be linked to the corresponding verbal explanation. Although there is no precise recipe for the analysis of photo interview data, researchers have challenged the idea that the pictures themselves can be analyzed in isolation of any wider frame of reference (KOLB, 2008). Multiple contexts influence their interpretation, and, therefore, care must be taken to differentiate the photograph's "internal narrative," (i.e. the content of the image as read by the viewer) from the "external narrative," its context of production consisting of

participants' photographic purposes and strategies (BANKS, 2001). The production processes that resulted in the photos "are also [themselves] data presenting a sociocultural situation" (KOLB, 2008, p.27) such that operations of "data-gathering" and analysis are deeply interwoven (see also JENKINGS, WOODWARD & WINTER, 2008). [14]

In order to learn inductively about the meanings children and their family members assign to technology, we studied the images and corresponding interview data from the sixteen participants whose photographs were useable. By moving back and forth between examination of the photos and review of verbal data, we were able to consider possible meanings and how these fit with developing themes, including, for example, how technology is used by children and parents in the management of psychological boundaries. Our focus here is on how children reacted to and fulfilled the research task, in particular, the different kinds of commentaries evoked in the interviews and how they led to different orders of insights and understandings. Using illustrative material from the interview transcripts, we attempt to show how photo-elicitation can provide a basis for theorizing about children's technology use. [15]

5. Varieties of Ethnographic Insights

Our request that the children photograph family members working and playing with technology was designed to draw their attention to human-object transactions. Yet on first viewing the entire group of images, we were surprised to see that almost half were static views of technological devices disembodied from their human users. In general, the children gravitated to such media staples as computers, televisions, video game equipment, and cell phones. However, a few interspersed these objects with kitchen appliances: refrigerators, coffee makers, and microwave ovens, and very rarely, included other utilitarian devices such as hair dryers and home alarm systems. The television remote control device appeared in only two out of the 229 images. Although we neglected to explore in the interviews the possible reasons why these devices were overlooked, their absence could reflect the taken-for-granted nature of much household technology. As SILVERSTONE, HIRSCH, and MORLEY (1991) note, the absence of an object from the phenomenological space may either be the result of its perceived unimportance or, alternatively, a sign of its importance as a useful device that has become "invisible" to its users. [16]

Photographic practices are inevitably shaped by social and cultural codes. Even photographs elicited by informants for research purposes are "framed or composed utilising some aesthetic principles" (HARRISON, 2002, p.859). We sensed that many children had approached the research task with the idea of compiling a kind of inventory of "what there is" (PAHL, 2006, p.96). For example, several children arranged collections of cameras, iPods[1] and other handheld devices on the floor, and six children took pictures in series to show the various devices that make up a technology cluster; by photographing a stereo system or

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1   iPod is a brand name for a digital audio (MP3) player.

computer workstation from different angles, they effectively highlighted its specific components. The absence of pictures of the children themselves was, as MIZEN (2005) notes, probably an inevitable consequence of the auto-driven method, which places children in the photographer's role. Even so, participants seemed in many cases to have heard the instructions not as "show people using technology," but, rather, as "show the technology people use," with emphasis on the available devices and their placement in the household. [17]

After reading and comparing the children's narrative accompaniments, we grouped similar descriptions together based on the repetition of words or phrases. Similar to other inductive analyses, these groupings were then combined into more general, conceptual categories. In this way, we identified three kinds of commentaries corresponding to different approaches to answering the research question: 1) commentaries exemplifying everyday practices, 2) commentaries capturing experiential dimensions of technology, and 3) commentaries recounting the life histories of technological devices. Taken together, these categories are revealing of "what matters" to participants as they explore their social milieu (KOLB, 2008 p.27). A fourth category describes an additional order of information located less in the interview data and more in the image content and framing. We found that the pictures' compositional codes, when viewed in relationship to the narrative accompaniments, afforded further insights into the production process and thus were uniquely revealing of children's vantage points. [18]

5.1 Exemplifying everyday practices

Our initial reading of the pictures provided a portrait of the homes' geography and artifacts and clear evidence that these children live in media-rich homes (LIVINGSTONE, 2002) populated by multiple televisions, computers, video game systems, and other devices. However, as previous authors have emphasized, photographic images even when they appear to be self-evident replications of reality, are high context artifacts (CHALFEN, 1987) whose meaning is ambiguous, incomplete, and "infinitely describable" (AITKEN & WINGATE, 1993, p.68; see also SCHWARTZ, 1989; BECKER, 1986). As in previous studies involving photo-elicitation interviews, our approach was based on the assumption that much of what we wanted to understand about the experience of technology would only be accessible through children's talk *about* the pictures as they contextualized the images and explained how they decided what to photograph. We hoped to begin to elicit such insights by asking children initially how they chose their subject matter. However they tended to give ambiguous answers to this question. For example, Emily said, "I just walked around to find any technology and took pictures ... they are all just random pictures"; Christopher said, "Well, I was just going to take a picture of anything that's electronic." It was only by taking each picture individually and asking, "Where did you take this picture?" or "What does this picture show?" that we began to invite brief but focused descriptions that revealed something of the child's photographic purposes. [19]

In some cases, the children's explanations of their pictures unfolded gradually, in response to our questions, resembling more of a "question and answer game," than the narrative-generating process we were hoping to achieve (KUHN, 2003). For instance, when Danielle was shown a picture she had taken of two devices lying on a bed, her initial comments were brief[2]:

"That's my mom's palm pilot and her cell phone. It's a Razr." (pause)

(Tracy: Does she use the palm pilot a lot?)

"Yes, she has it <u>always</u>."

(Tracy: What does she use it for?)

"I'm not sure. She just does."

(Tracy: And her cell phone, she uses it a lot?)

"Ye:s."

(Tracy: Mostly for business?)

"E:verything." [20]

As the interview conversation went on, however, she began to offer more embellished explanations. In an enthusiastic burst, she described her nine-year old brother's technological accomplishments: how he made a potato clock that actually works and a cardboard garage with a door that goes up and down. [21]

By looking again at the images as we listened to our interviews, we noticed that children had tried to exemplify the family's patterns of technology use through their selections of what to photograph. Emily explained a photograph showing her iPod sitting on her nightstand, saying, "I listen to it at night, I set it to wake me up and I bring it to school" (Figure 1). Pointing to another picture, she said, "That's my dad using his Blackberry[3] because he likes to use his Blackberry ... all our family members have Blackberries" (Figure 2).

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2   Transcription conventions were adapted from SACKS, SCHEGLOFF and JEFFERSON (1974). Underlining indicates emphasized speech. ":" indicates elongated speech.

3   Blackberry is a brand name for a personal digital assistant, a mobile device that combines computing, telephone and Internet capabilities.

Figure 1: Emily's iPod on her nightstand

Figure 2: Emily's father with his Blackberry [22]

Besides offering an empirical profile of technology practices, the combination of words and images brought deeper meanings to the fore by giving a sense of children's personal, sometimes intimate, relationship with technology:

"That's my computer, I couldn't really live without a computer, because I need it to do my homework." (Jessica)

> "That's my computer. I can do so many things on it, and it's always there for me, no actually it's hard to go somewhere with it, but I'm always there for it. I can watch DVDs on it." (Kristen)

> "That's my Playstation 2, it's a thing I need to do to live." (Will) [23]

Such comments point to the potential for photography to elicit more "affectively charged" (SAMUELS, 2004) responses than those from a words-only interview format, thus deepening understanding of how household technology animates children's worlds and defines who they are. [24]

In some cases, children's efforts to depict the "typical" in family life seemed to interfere with the ability to capture spontaneously-occurring events. Justin's pictures were especially significant in alerting us to the possibility that family scenes had been staged for the camera. Justin took a series of shots that show his mother in nearly identical poses: for example reaching out toward the digital thermostat on the wall, the television on the kitchen counter, a computer, and a copier. In the final picture she is bending down in front of the open dishwasher. The obvious similarities in the composition and framing of the images suggested that Justin may have created a series of reenactments rather than catching behavior as it occurred. The possibility that children had organized specific activities for the camera (WAGNER, 2004, p.1479) led us to reconsider other images as contrived for the occasion, like those of a boy putting a potato in the microwave oven or a man working on his laptop (Figure 3).

Figure 3: A father working on his laptop [25]

Image-based researchers have long been aware of the problems of building research accounts on the supposed realism of the materials generated. But even as we questioned their authenticity, we recognized that seemingly fabricated scenes might, again, exemplify patterns of technology use, and offer insight into

practices not otherwise accessible to observation. One reason children may have decided to reenact an activity probably stems from the difficulty of photographing transient moments of behavior. ADELMAN (1998), citing the photo-journalist Henri CARTIER-BRESSON (1968), notes that the reactivity of subjects to the camera inevitably interferes with the spontaneity the photographer seeks to record; any spontaneous gesture we want to capture on film "has already under-gone change," so that, inevitably, we photograph something else (CARTIER-BRESSON, 1968, p.iv). One of the children, Allison, described her frustration in trying to photograph her babysitter talking on the phone; each time, the babysitter would finish her call before Allison could snap the picture. [26]

5.2 Capturing experiential dimensions of technology: The dynamics of boundary management

Sometimes the photographs stimulated children to go beyond the explicit content of the pictures to reflect on associated events and contexts. Significant to us was how the photographs touched off descriptive narratives of family routines, as when Danielle expanded on her photograph of the large-screen TV in her parents' bedroom:

> "It's on at night always. We have our side of the house and then straight through there's their room and you can see through the windows blinking lights and it's on to like 11 at night ... My mom is usually in there watching 'Law and Order' and then she usually falls asleep." [27]

Because the bedrooms are situated in perpendicular wings of the house, Danielle has a view through her window to her parents' window, so that the blinking TV screen is a clue to her mother's activities. The picture served as a prompt enabling Danielle to recreate the situated activities surrounding household media. [28]

Photography was particularly helpful for expressing awareness of the subtle gradations of privacy and territorial zones associated with different media. Emily took a picture of her father's home office, explaining, "It's his sanctuary, ... his little space where he watches TV." Similarly, Robert explained that his dad liked to spend most of his time in his office on his laptop, and that he, Robert, was usually allowed in the office "only to print something." [29]

Through photographs, children reveal their awareness of these territorial distinctions and also their attempts to circumvent the rules in order to secure access to space and technology. This was exemplified in Emily's interview. She had taken a picture in her father's office of her younger brother slumped on the sofa watching television (Figure 4). Explaining this picture, she said that even though she and her brother are not supposed to watch TV in the "sanctuary," her brother prefers watching there because he is less likely to get caught. If he watches the bigger TV in the living room the sound travels farther, thus betraying his presence to their parents. She told us:

"You can hear it [the TV in the living room] from far away but if you close the door in
<u>this</u> room [pointing to the picture of the office] you can't hear anything from outside ...
Sometimes, if my step mom and dad are having a conversation he'll sneak in there
and watch.

Figure 4: Sneaking in to watch television [30]

The fact that family rooms and the technology they contain are not equally
accessible to all family members is an issue that probably looms large for many
children. Significantly, the act of picture-taking seemed to dredge up thoughts
and feelings associated with normative rules about space and territory. Together,
the pictures and narratives provide insights into children's efforts to negotiate
these spatial boundaries. [31]

5.3 Recounting "life histories" of technological devices

Most of the commentaries suggested that children constructed the photographs
with patterns of technology use in mind. However, another kind of commentary
evoked by the photographs emphasized the "life history" (KOPYTOFF, 1986) of a
device as it progressed through different areas of the home over time. For
example, Danielle explained two photographs showing different televisions, one
old and one new:

"This is a new TV, this TV used to be in there, but now we watch a lot more in here
[the playroom], because this one has cable now, it didn't used to. My brother has a
TV in his room, the TV that was in the playroom is now in his room and he moved all
his stuff in his room too." [32]

Jack, who photographed the television in his room gave a similar account:

"That's my TV, but before we got our big screen TV it was in the living room. We just got it."

(Jane: How long have you had a TV in your room?)

"I got one about three years ago. It was my parents' old TV but I got it a couple years ago." [33]

Ellen photographed her father on his laptop computer, explaining:

"We just recently gave the computer that was upstairs to my cousin, Natalie. She just came down from New York, she graduated college and she decided to stay here and we gave one of our computers to her." [34]

Such narratives show how the domestication of televisions, computers and video game equipment proceeds as new equipment replaces older objects, and they also indicate that children track these movements closely. Items in disrepair seem not to be thrown away, but instead are passed down to children or moved to other rooms in the home. Children repeatedly photographed the hand-me-down computers in their rooms, which they later characterized in the interviews in terms such as "very old," "it doesn't have Internet," or simply, "It's broken." Angie, for example, said

"I have a computer but it doesn't really work. You can turn it on and stuff but it doesn't have any Internet, you can go on Word but you can't really save it on your USB to print, so I don't really use it." [35]

The possibility that technology resources are not allocated equally to all family members was especially intriguing in light of the data compiled through the written questionnaires. Questionnaire responses suggest that children are active and knowledgeable users who possess a store of accumulated knowledge about information and communication technologies. Thirty-nine of forty-eight children reported helping their parents or siblings with computers or other devices. In the questionnaires, children provided examples indicating a wide range of technical expertise, from explaining the buttons on the television remote control and typing for parents who lack keyboarding skills, to incorporating photos into files and downloading music for iPods. Other contributions by children included organizing Internet searches, fixing the printer and copier, making graphs on the computer and helping to create PowerPoint presentations. In some cases, children's help seemed to be instrumental to parents' accomplishment of their professional work, as when one boy helped his mother, who was a real estate agent, make a sign for her office. [36]

Previous research by HOLLOWAY and VALENTINE (2001) suggests that parents place high value children's development of technological skills because they see it as a gateway to their participation in the workplace of the future. However these life history-focused accounts of household technology suggest a more complicated picture. The unequal provisioning of technological resources within the family and parental restrictions on children's access seems to be at

odds with children's sense of themselves as competent technology users. As Emily summarized her father's rules regarding computer use: "My dad doesn't let us go on his computer because he's afraid we'll put viruses on it or something. Well, we never put a virus on ours so why should we put it on theirs?" [37]

5.4 Framing children's vantage points through visual codes

Children were able to describe and comment on the photographs' contents more easily than on their aesthetic properties. Yet certain stylistic features such as the framing and composition of the images sometimes embedded important information about participants' orientation toward the research task. For example, in about a third of the cases, the first two or three images in each series were pictures of participants' classmates posing or making faces. In these cases, the children appeared to have begun snapping pictures as soon as they received the cameras, confirming the observation by SHARPLES, DAVISON, THOMAS and RUDMAN (2003) that teenagers find the act of photography an enjoyable event and social ritual. Several children turned the activity of picture-taking on itself, photographing their parents photographing them. In these cases, they seemed to be "teasing" the researcher by highlighting family photography as an instance of technology-in-use. One boy took a photograph of himself in the mirror while wearing his iPod headphones, thus exploiting photographic effects to show two technologies in use at once. [38]

Overall, children's picture-taking, like adults', appeared to be shaped by taken-for-granted codes of visual composition and predefined notions of what makes a "good picture" (PUNCH, 2002; ORELLANA, 1999). In the angle of focus and posing of subjects, several photographs resembled those that might be produced for a family album, following visual conventions that CHALFEN (1987) terms "the home mode" of photography. Tara's pictures exemplify the home mode in showing her three-year old sister and ten month-old brother posed next to, holding, or touching, various devices such as a telephone, laptop computer and exercise machine. In this series of images, the little brother and sister are standing still, smiling and making direct eye contact with the camera. Here, as in Justin's photographs, the compositional similarities across the series allowed us to see patterns not readily apparent from our initial, more literal perspective. Tara's interview provided crucial context for her photographs, revealing that she was babysitting on the day she got the camera and decided it would be fun to include the younger children in her pictures. She explained that she often babysits for her siblings when her parents are working. Given the very young age of the subjects, most of these pictures cannot be taken as representative of actual technology practices and yet they are indirectly expressive of Tara's identity (HARRISON, 2002; PINK, 2001) as a big sister who helps out around the house. [39]

This particular combination of internal narrative (the image content) and external narrative (the production context) enabled us to shift toward a more integrated understanding in which the taken-for-granted image of children as resource-demanding dependents is thrown into question (BURMAN, 2006). Children

engage in a variety of activities in the family sphere like watching younger siblings, assisting family members with computer problems, even preparing a snack or washing their own clothes (the latter two activities were shown in other pictures). Yet these actions tend not to be acknowledged as "work" by adults. From this perspective, Tara's pictures lead toward a fuller appreciation of children's praxis by reframing her role as babysitter as a significant contribution to the mutuality of family life and the "general caring" of the household (BRANNEN, HEPTINSTALL & BHOPAL, 2000). [40]

6. Conclusions

Participatory photo interviews contribute multiple orders of insight about children's experience of their home worlds. Besides extending ethnographic description of practices otherwise inaccessible to observation, photo interviews reveal something of the personal significance and meanings imputed to technological artifacts. More importantly, the invitation to children to take pictures affords them the opportunity to exercise "photographic seeing that is also a way of phenomenological seeing" (CHAN-FAI, 2004 in KIROVA & EMME, 2006, p.2). The resulting pictures and narratives provide an age-centered account of the household by illuminating claims of technology ownership and normative rules of access within the family that might not be verbalized in a traditional interview. [41]

Photo interviews, further, evoke a sense of children's affective experiences in technology-rich households where family members drift away to separate spaces to log on to computers or watch television, and where, despite the presence of multiple technological devices, children tend to have more limited access than adults to technology that "works." The overall picture is one of a child differently "framed" in different contexts, sometimes as immature and dependent, at other times as adept and accomplished. Taken together, the data elicited through the different formats underscores the importance of gaining access to children's perspectives and voices directly, rather than through those of adults. [42]

Yet in spite of photography's apparent potential for capturing behavior in situ, the indexical capacity of pictures to depict family members "in action" was sometimes confounded by characteristics of the technology, by children's reading of the researcher's expectations, and by the child's awareness of conventions of photographic representation. Overall, these data serve as a reminder that children's visual representations cannot be read simply as transparent indicators of underlying dispositions because children are active in the construction of meanings. The use of visual methods calls for a complex analytic strategy in which the interpretation of thematic content is intertwined with some awareness of the reactions of children to the research and to the ways they produce their own contexts endogenously. Although we adults try to create the conditions that "allow children to show us their worlds" (GRAUE & WALSH, 1998, p.13), children are observing us observing them, trying to make sense of the research task, to understand the researcher's agenda, and using these understandings to produce appropriate behavior of their own. [43]

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