Towards a Framework of Publics: Re-encountering Media Sharing and its User

SILVIA LINDTNER, JUDY CHEN, GILLIAN R. HAYES AND PAUL DOURISH

University of California, Irvine

Design and evaluation of user-generated media production and sharing in Human-Computer Interaction (HCI) often focus on formal and informal media sharing, such as communication within social networks, automatic notifications of activities, and the exchange of digital artifacts. However, conceptual tools for understanding how people relate to the audiences they reach through these systems are limited. The increasing interest in user-generated content in HCI demands the infusion of new methods and theories that explicitly engage the construction and use of media within and among large groups of individuals and systems. In this paper, we suggest that the notion of "publics," drawn from media theory, provides useful insights into user-driven, social and cultural forms of technology use and digital content creation. We illustrate this by employing the notion of publics to the findings from a two-month deployment of a mobile photo sharing platform in a youth housing community. The results of this empirical work coupled with a theoretical examination of publics stimulate reflection on prevailing interpretations of user-designer-reader roles. The paper provides an outlook for potentially new and productive ways of understanding interdependencies within those activities. Implications that can be drawn from this work concern the role of digital media creation and sharing for the formation of collectives and how people position themselves collectively in relation to larger social groups and societal norms. The analysis suggests fruitful crossovers among HCI, Media Theory and New Media Research by approaching the user as both consumer and producer of digital content.

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1. INTRODUCTION

The content and artifacts shared through digital media today reach across a multitude of interfaces and devices, ranging from mobile text and photo blogging to online gaming and social networking. Indeed, digital media sharing has become a pervasive means for communication and interaction in our leisure and work lives. For example, location-based games, urban applications and social networking sites connect people through the activities in which they engage and the places that they go [Bell *et al.* 2006; Benford *et al.* 2004; Chang and Goodman 2004]. Likewise, mobile phones, even when used for data connections rather than for voice calls, are still predominantly used to communicate [Ito

Authors' addresses: S. Lindtner, J. Chen, G.R. Hayes, P. Dourish, Department of Informatics, Donald Bren School of Information and Computer Sciences, University of California, Irvine, Irvine, CA 92697-3440, USA. E-mail: lindtner@ics.uci.edu, judychen@ics.uci.edu, gillianrh@ics.uci.edu, jpd@ics.uci.edu.

and Okabe 2005]. Even applications focused on environmental sustainability or citizen science seek ways to bind people together in larger collectives, or to show people how their actions connect them to others [Dourish 2010]. These notions of connections between selves and others are fundamental to considerations of the social aspects of computing in HCI. With Twitter "tweets" and Facebook or IM status updates, users do not communicate with only one specific other person, but rather, with a more generalized audience. Similarly, reports of location in large-scale location-based systems and activities inferred from sensor networks connect an individual to a generalized audience rather than to a specific individual (or set of individuals).

Recent approaches in media and cultural studies have begun to investigate these ties between situated practice and larger social arrangements, extending analysis beyond the user-system level and including confluences of computation and communication, and to the ways in which people are connected. For example, the sharing of digital media has come to be understood not just as a form of material exchange, but also as a site of social and cultural production, supporting new forms of social connection, the maintenance of social ties and identity expression [Ito and Okabe 2005; Jenkins 2006; Boellstorff 2008; Turner 2006]. Online networking platforms such as Facebook and Second Life and online games like World of Warcraft afford not only the creation and sharing of digital artifacts, but also the means to create and maintain trustworthy relationships and to develop ideas of selfhood and collective belonging [Boellstorff 2008, Ellison *et al.* 2007, Lindtner *et al.* 2008].

These networked practices seldom pertain to a single application. They span an ecology of personal media, new communications technologies, and commercial and mass media [Ito and Okabe 2005; Fuller 2006]. In this paper, we focus on this notion of digital media sharing as a site of cultural production and collective expression of meaning and connection. Previous research in HCI has provided in-depth insight into media sharing as a site of self-expression and self-representation within social groups [Van House *et al.* 2005], as a means for establishing and maintaining connection to friends, family and co-workers [Ames *et al.* 2010; Baumann *et al.* 2007; McCarthy *et al.* 2008; O'Hara *et al.* 2007; Voida *et al.* 2005], and its role in social spaces such as the conference setting [McDonald *et al.* 2008] and museum installations [Hindmarsh *et al.* 2002]. While these works focused on the role of media sharing for processes of impression management and representation of the self within a specific social setting (*e.g.,* the home or workplace), our approach speaks to a similar process of expression of selfhood but in relation to larger collectives and social values not a specific audience.

Although many mobile and social sharing applications have adopted the model of "publishing to the world" – such as in location-based recommenders [Cheverest *et al.* 2000; Dey and Abowd 2000; Griswold *et al.* 2004] – the HCI community does not yet have all the analytical tools necessary for examining these collectivities. What does it mean to broadcast your status to a generalized audience? How does one report movements, location, plans, or interests to a semi-anonymous group? What kinds of presentations of self characterize these scenarios? What other meanings (*e.g.,* social, cultural and emotional) are produced alongside the creation of content shared online? In this paper, we suggest that media and cultural studies offer interesting conceptual resources for addressing these questions through their attention to the mediated relationship between the self and others, between social aspects of technology use and political, economic and cultural layers [Ito 2009, Poster 2006, Warner 2001, Williams 1974]. In our analysis, we draw in particular on the conceptualization of "publics" as

introduced by media and cultural theorist Michael Warner [Warner 2001, Warner 2002]. The notion of "public" here is neither the opposite of "private" nor is it an indicator of all people as in "the public at large." For Warner, a public is similar to an audience, in that it is the imagined recipient of some media form, content or performance. Unlike "audience," however, a public is formed not simply in the imagination of the author or producer, who seeks to address a particular group or particular interests. Rather, it is a product of the imagination of the audience members themselves. In other words, publics are formed when media consumers collectively recognize themselves as members of potential imagined audiences.

In this paper, we demonstrate the relevance this notion of publics has for understanding how sharing technologies mediate collective social relations. Considering publics provides a set of conceptual resources for understanding the otherwise undifferentiated others who are so often part of digital media systems, and for answering some of the questions raised around collectivities. To demonstrate how the concept applies to HCI, we draw on our experiences from an eight-week deployment of an experimental mobile photo sharing application during which publics became an important tool for analysis. The system, named *mopix*, allowed us to examine media sharing situated within and around a particular location. In understanding how people engaged with the imagery generated through *mopix*, our attention was first drawn to how, through their photo sharing practices, participants jointly developed an understanding of the appropriate sort of imagery to appear in the technology system – a collective aesthetic. In further exploring this, we found Warner's notion of publics particularly fruitful for understanding what role this aesthetic had for the community members as a whole and to connect this more generally to collective practices emergent through mobile and social computing systems. We use this study, then, to illustrate the broader relevance of Warner's publics to HCI, particularly when we start to conceive of computational systems not simply as technologies people use but as media through which they communicate.

The remainder of the paper is structured as follows. First, we describe in more depth Warner's publics and counterpublics and the relationship of these concepts to research and theory surrounding technology use in HCI. We then provide an overview of the motivation and design of the mobile photo sharing application *mopix*. Using empirical data from deploying *mopix* in a student housing community, we illustrate how the notion of publics can provide a particularly useful vantage point for understanding complex media sharing systems. We close with a discussion of themes that emerged from the deployment and how the application of publics constitutes a useful analytical tool to assess user-designer-audience relations in contemporary media sharing practices. We highlight, first, how users of the *mopix* system developed a sense of a collective aesthetic through their sharing practices and in doing so engaged with social values at large; and, second, how the concept of publics helps to show the effects of these processes in everyday practice and localized processes.

2. PUBLICS AND COUNTERPUBLICS

In writing of "a public," Warner explicitly contrasts his reading with two other definitions of public – first, the notion of the public at large, a social totality, and second, a specific concrete audience for a particular performance or event in which the members of the audience can be enumerated. Thus, when he describes the public as constituted by some

particular publication (*e.g.,* National Geographic or the Wall Street Journal), he is neither concerned with the public at large (that is, everyone who might read a copy of the publication, including the entire citizenry of the countries in which it is sold), nor is he concerned with the concrete public, which might include every individual who *has* read a particular issue. Instead, his concern is with the social body that is brought into being through a relationship between media production and its reception. People who read an issue of National Geographic or the Wall Street Journal recognize themselves as the sorts of people who are being addressed by those publications. Following this line of reasoning, the public in Warner's description for each publication includes the group of people who think to themselves, "This is aimed at people like me." The core of a public lies in that notion of "people like me." To say "people like me" is to recognize that "I am not the only one," to imagine or recognize ourselves as part of a larger group.

There are infinitely many publics, then, because there are myriad media objects and events, but also because there are many responses. Publics are, indeed, constituted in these responses. To use an example most familiar to readers of Henry Jenkins [Jenkins 1992], the television broadcasts of Star Trek in the late 1960s elicited a wide variety of fan responses. One of these was amongst those who saw, in the plotting and acting, hints of a homoerotic relationship between two of the principal characters. What became known as "slash" fiction – so named for the punctuation mark in the common abbreviation "K/S" for Kirk and Spock – is a form of fan fiction in which this alternative reading of the canonical material is explored. Slash fiction is an imaginative repurposing of media materials – in this case, the characters, settings, and framework of a television show – and draws attention to the active role that media consumers play in creating meaning. However, slash fans did not argue that slash represented a transformation of the source material, but rather that they were bringing out potentials and meanings that it already carried. Rather than create the alternative, they recognized it. Thus, in this example, Star Trek brings into being multiple publics – not just one that includes those who recognize themselves as united by a common vision of interstellar travel, racial harmony and universal federation, but also one made up of those who see different messages in the programs. Despite these differences, all of the people in these publics identify with the messages they perceive in the media. Furthermore, they recognize that others also identify with these positions, thereby constituting a public in the process.

Warner's emphasis, therefore, is on many publics rather than a single public and on the ways those who witness or encounter media collectively imagine belonging to them. It is this imagined belonging that brings publics into being. The example of slash fiction underscores how a public may be constituted precisely in resistance to a dominant position or interpretation. The constitution of a public – or, more particularly, of a "counterpublic" – may lie in one's ability not simply to assert that a particular publication or piece of media is "aimed at people like me." Instead, the notion of a counterpublic considers a group of people who examine a piece of media and assert "I/we, unlike most, can see what is *really* happening here." This focus of attention on counterpublics draws attention to how the constitution of a public might be an act of resistance even as it is an act of allegiance, but counterpublics are not opposed to publics; the term "public" encapsulates both.

It is important to distinguish Warner's definition of "publics" from that introduced by John Dewey [1954], which has recently been brought into the HCI literature [*e.g.,* LeDantec *et al.*, 2010]. Whereas Warner describes a public in terms of its relationship to particular kinds of media objects, Dewey describes it in terms of a relationship to a

particular problem. For Dewey, the constitution of a public lies in the impact of particular actions and the formation of problems and common interests. For Warner, the public arises in quite different ways, and indeed, it is, primarily, an object in the imagination of an individual media consumer.

Warner set out a series of properties for his notion of publics. First, *a public is self-organized*; it is not formally brought about, and it exists only with respect to a particular sphere of communication and discourse. Second, *a public is a relation between strangers*; the essence of a public lies not in the relation between media producer and consumer, but rather, in the imaginative and imagined relations between consumers themselves. In this model, consumers are actively involved in the appropriation and interpretation of the materials they encounter. Third, *the address of public speech is both personal and impersonal*; utterances and media productions speak to us, personally, and yet we know that they were not addressed to us specifically but to a public. Furthermore, that public did not exist until it was called into existence by the very utterances and media productions we find to be both personal and impersonal. Fourth, *a public is constituted through mere attention*; all that is required for the public to be brought into existence is that people recognize themselves as "the sort of people" addressed. Fifth, *a public is the social space created by the reflexive circulation of discourse*; that is, it is in the transmission of, retransmission of, and reflection upon media objects that a public and its conditions of possibility arise. Sixth, *publics act historically according to the temporality of their circulation*; in other words, the dynamics of the media are critically important in the shaping of a public. Although Warner originally focused primarily on print and visual media in his conception of publics, the question of temporality is especially relevant to digital media and mobile social computing. Seventh and finally, *a public is poetic world making:* a form of conjuring new worlds into existence not through political action or institutional entrepreneurship but purely through discourse and the creation and experience of media.

The concept of publics provides a particularly useful vantage point for understanding contemporary practices of digital media production and circulation. We take up Warner's assertion that although his theories were developed around written text, "publics are increasingly organized around visual or audio texts" [Warner 2001]. In particular, we explore not the formal production of media but the informal, user-content driven action of media production, sharing and use.

We are not the first to employ Warner's framework to understand production and use of digital sharing systems. For example, Kelty [2008] used publics to examine the culture of sharing in open source software collectives. He demonstrates the relevance of Warner's publics to the analysis of everyday technological production and use. Kelty extends Warner's conception by noting that open source software culture is a *recursive* public; that is to say, it is a public whose primary concern is with the means of its own production (the Internet and its software). This example is particularly interesting in how Kelty treats what happens when technologies become sufficiently embedded into everyday life and thereby become media through which people act. Similarly, digital media sharing applications link people together directly and indirectly in such a way that notions of public might be usefully applied to understand how people see themselves constituted as publics through the circulation of digital objects and the collective witnessing of performance and discourse. For example, the notion of public has previously found appreciation in the study of practices around social networking applications and media sharing. Varnelis [2008], for example, uses the notion of

"networked publics" to describe the increasingly complex networks through which people are communicating and the ways in which they are mobilized with and through media. The term "networked publics" is introduced as an alternative to notions such as audience or consumer, to acknowledge media engagement as being active rather than passive or consumptive.

Traditionally, a useful reference in describing the role of technology in relation to social processes such as self-representation in front of a perceived audience has been found in sociologist Erving Goffman's work on "impression management" [Goffman 1959]. Any notion of a "public" remains implicit in Goffman's effort to locate the construction of social norms across various institutional and informal contexts. An important aspect, however, not explicitly addressed in Goffman's work is the non-compliant practices of intervening, and the formation of new social and cultural structures, both in support of and resistance to changing social norms and values. It is here that we found Warner's concept of publics and counterpublics particularly useful in addressing the remaining gap. This is not to say that social and political structures do not frame and inform people's processes of meaning-making and acting in the world. We stress, however, an understanding of values and norms not as a structural given, but as relational processes to historical, economic, cultural and political contingencies.

Having set out some of the theoretical framework, we turn now to our experience in a small-scale empirical study in order to show how Warner's conception of publics can provide analytic insight into investigations of user-contributed media.

3. MOPIX: MOTIVATION, SYSTEM DESIGN & DEPLOYMENT SITE

Much of the prior research on media sharing in HCI examines digital production and consumption but approaches the two processes as disconnected phenomena. These prior approaches often focus on "audiences" – asking how audiences are identified and reached and how technologies connect media producers to consumers, often assuming disparate activities [Akeret 2000; Balabanović *et al.* 2000; Frohlich *et al.* 2002; Kindberg *et al.* 2005, Salovaara et al 2006]. By contrast, in focusing on "publics" here, we want to think of digital production, sharing, and consumption as conjoined activities. Producers and consumers are not separate, and acts of creation and sharing are iterated throughout continuous use and participation.

Motivation for our work stemmed from an interest in the circulation of digital images over time and the production of publics as a result. Findings from the studies cited above have shown that the collective viewing and sharing of media, as much as its creation, is an active and engaging social activity that contributes to group experiences by creating a common space where people can have a shared experience with others. It is this collective experience that is the focus of our attention here. In particular, we were interested in leveraging the idea of "instant photo sharing" [Frohlich *et al.* 2002] by streamlining the upload process of photos similar to the approach taken by others [Ames *et al.* 2009; Davis *et al.* 2005; Naaman and Nail 2008]. Building on these works, we additionally wanted to offer users the opportunity to connect to a wider yet situated audience. We set out to explore this dynamic of situated yet collective and semi-anonymous sharing practices with the design of a mobile photo sharing application of our own, *mopix*.

During our deployment of *mopix*, we came to recognize the ways in which people imagined themselves as participants in a broader collective of media consumers and producers, generalized yet localized, with emergent norms of aesthetics and interpretation which they were collectively involved in shaping as both contributors and consumers. We discovered that photo sharing is a case of this sort of public production. Participants found themselves grappling with questions of who they were as an audience, what types of things might reasonably be shared and why and what kind of content "people like them" might be interested in seeing – all while immersed in the system as producers and consumers. Thus, participants explored and addressed these questions through their interactions with their own photographs, as well as those shared by others.

3.1 Design

mopix was designed as a probe for studying how people might engage with digital media and, in particular, photo sharing in wider social contexts than those presented in related literature [Ames *et al.* 2009; Davis *et al.* 2005; Naaman and Nail 2008]. The system included a mobile phone application and a set of distributed displays. The mobile phone application allowed users to upload geo-tagged photos captured with their mobile phone cameras. After capturing photos, the *mopix* application prompted users to share them. If shared, *mopix* asked the user to input optional titles and descriptions (see Figure 1). These details, along with the geo-tagged images, were then uploaded to the *mopix* server. Regardless of whether a photo was shared, it was saved on the user's phone but could be deleted from the phone, as with any other photo taken with the phone's built-in camera. Once uploaded, photos were shared to the nearest display and could not be removed from the display. Photos initially not shared could not be shared at a later time, co-locating the decision to share closely in time with the act of capture.

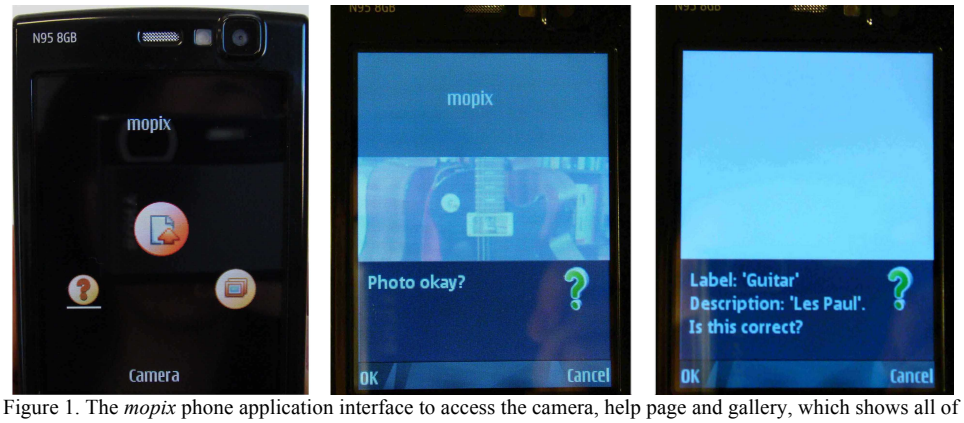

Figure 1. The *mopix* phone application interface to access the camera, help page and gallery, which shows all of the photos the user has taken, both shared and unshared (left). After taking a photo, the user is prompted to share the photo (center). If shared, the user is asked to provide a title and description for the photo (right).

Immediately upon receipt at the server, each photo was accessible from a distributed set of *mopix* displays. Each display consisted of a 6"x8" wooden frame housing a Nokia N800 device. The displays were mounted at a height of approximately five feet above the floor. Their size was intentionally small enough to require users to come within arms

distance of them to interact with them yet large enough to be noticeable from a much farther distance.

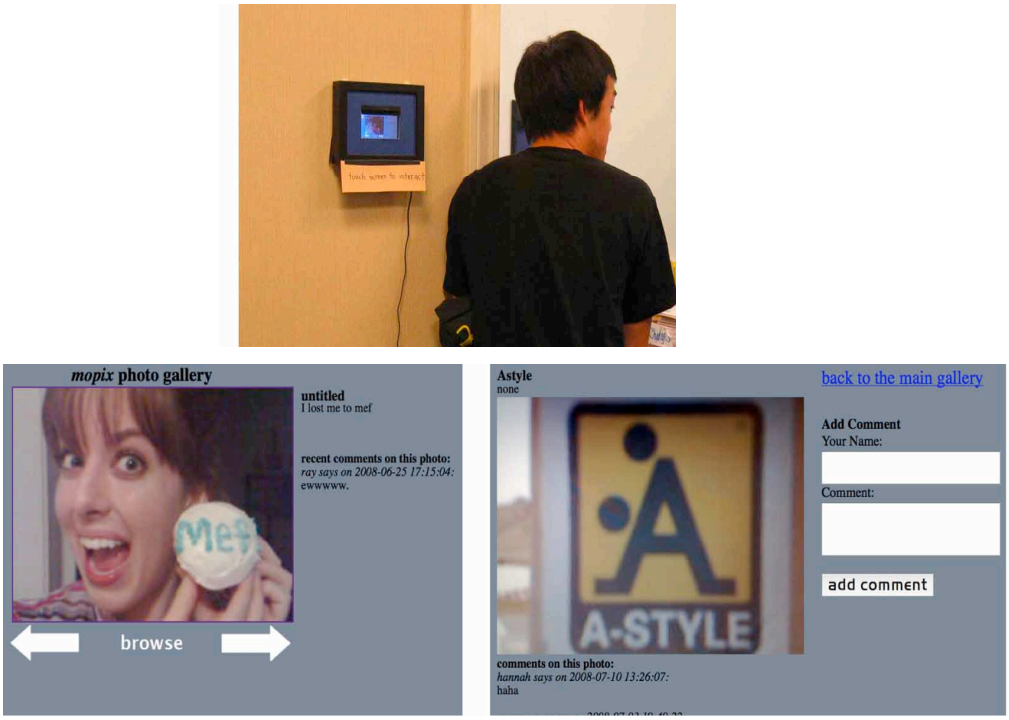

Figure 2. Interacting with a *mopix* display (top center), the *mopix* display interface: the browsing interface displaying a photo, its title, description and most recent three comments (bottom left), the comment screen for a photo (bottom right).

The mopix displays (see screenshots in Figure 2) allow passers-by to see and browse through photos that people have shared. The browsing interface on the displays enabled viewing the gallery of photos and showed a photo, its title, its description and the most recent three comments left for that photo. When no one was interacting with a display, *mopix* entered a slideshow mode, rotating through the collection of photos and displaying each photo for one minute before displaying the next one. Users could also navigate to other photos using forward and back arrows, although there was no high-level browsing for an overall perusal of images. This design choice was made to encourage users to click through all of the images and to provoke surprising and spontaneous responses to images as users encountered them. Photos were displayed in the order in which they were uploaded. Touching a photo on a display brought the users to the comment screen (see Figure 2) through which they could leave comments via an on-screen keyboard and view all of the comments that have been left for a particular photo.

We were particularly interested in the potential impacts of tying access and display location to the location where a photo was captured. The photo distribution scheme used in *mopix* ensured that photos were shown on the displays physically closest to the point of capture. If the location information of a particular photo was unavailable (*e.g.,* a user is

in an indoor location where GPS satellite signals are unreachable), then the photo was shown on all of the displays.

3.2 *mopix* in Use

We deployed *mopix* in a student housing community located adjacent to a local university for eight weeks in the Fall of 2008. A total of 10 displays were installed throughout the complex, which spans 54 acres and houses approximately 3,000 undergraduate and graduate students. We placed the displays in public communal areas that were frequently visited by residents, such as study lounges, leasing offices, game rooms and fitness centers.

Sixteen residents (nine women) were recruited via the community mailing list and fliers placed around the complex . The participants were all students at the university (14 undergraduate, 2 graduate) and ranged in age from 18 to 26 years old. They were selected to include a diverse set of photo taking and sharing habits prior to enrolling in the study, ranging from, for example, a semi-professional photographer who worked for the university newspaper to hobbyists who take or share photos for example during social events. Before we began the deployment, we invited each user to participate in an hour-long semi-structured interview in our research lab. The interview focused on the participants' current photo capture and sharing habits and prior experiences with public displays. During the initial meeting, we also explained how to use the *mopix* application and how to share photos.

We collected detailed field notes for 30 hours of observation on site over the eight-week period of the study. These notes focused on the kinds of interactions that took place in the shared community spaces and around the *mopix* displays. In particular, we noted what people's activities were before, during and after interacting with the displays, the length of the interaction, whether there were other people near the displays, and how people responded and interacted with others around them.

In this paper, we focus on the experiential aspects of photo taking and sharing as noted during participant observations and through informal conversations and interviews with the participants. We also emphasize that this research was not designed to be a systematic study of publics or the emergence of publics around photo sharing, but to explore the relevance of the notion of publics as an analytical lens and vantage point for considering media sharing practices and their relevance to HCI more broadly.

At the end of the eight-week period, we conducted a second round of interviews with the participants that lasted 1.5-2 hours at the housing community where *mopix* was deployed. We discussed the photos they took, comments other people left on their photos and comments of their own that they left on the displays. We asked them about what they thought of other people's photos, whether they interacted with people in front of the displays, what the interaction was like and the ways they felt connected to the other participants. We also conducted 10 semi-structured interviews with people in the community who did not use the *mopix* mobile phone application. These participants were recruited by approaching people we observed sitting or standing near the displays. For data analysis, we considered the visual content created by our study participants (in total, study participants shared 156 photos through *mopix*), interview data as described above and data collected through field notes taken during observations at the housing community.

4. COLLECTIVE AESTHETICS

Photography, even informal photography, is an aesthetic practice. By this we do not simply mean that people attempt to take "pretty" pictures, but rather, that a sense of appropriateness and the right "look" governs both individual photographs and the collection as a whole. "Aesthetic" here, then, is not simply an assessment of the formal properties of the visual images. It denotes a qualitative assessment of the experience of participation [Brewer *et al.* 2008]. The crafting of an aesthetic is not simply an individual process. Although the classical image of the artist may be that of the individual creative force, aesthetics and aesthetic practice are highly organized forms of sociality [Becker 1984; Bourdieu 1993; Gell 1992]. Similarly, in *mopix*, the collective sharing of photographs generated a context within which new contributions were assessed.

For the community in which *mopix* was deployed, aesthetic meaning did not emerge from the images themselves nor from *a priori* assigned values from individual photographers or a curator, as for example in an artist's exhibition in a gallery. Instead, the near instantaneous transfer of photos from point of capture to point of display from an egalitarian collective of artists *and* patrons enabled an emergent collective aesthetic produced through the *relationship* of the artwork (the photos) with the audience (the residents of the housing community). What we observed through the course of our deployment was a unified aesthetic that emerged from the participants' encounters with each others' interpretations of appropriate and visual appeal through the *mopix* displays.

Part of the process of orienting towards an audience and assuming one's participation in a particular public is the attempt to generate specific kinds of responses. Participants invented a series of tactics to invoke reactions from others, thus engaging directly with the media consumers in the community. Common strategies included experimenting with the composition of photos, particularly with ambiguous content or interesting camera angles and adding provocative labels upon sharing. One participant, Jessica, labeled one of her photos with the question "*Poo or yum yums?*" (see Figure 3). Although a photo of a piece of chocolate resting alone on a bed might have appeared unspectacular, paired with the question, it was intended to be provocative and to solicit reactions:

> "*You decide, you know, is this poo or chocolate… I did that with most of my photos. If I saw something – is that what it is or isn't it. Because it would be something I would expect a response from.* ***People can respond to it. Not just say that's nice. Most people, they said that's cool and that's nice. But, I asked what is that. You want some kind of interaction. Most people just scroll through. But I wanted some kind of reaction, what is this?"*** (emphasis ours).

Like Jessica, Ravi attempted to capture things he considered unusual to capture the attention of others in the community: *"...* [I took photos of] *pretty much things…that I looked at and it if caught my eye it looked strange and it might impress other people, I would take a photograph and share it."* Ann discussed the consequences of sharing a photo that would not appear appealing and interesting: *"I don't think people would just want to see pictures of two people doing nothing. It was just a normal picture."*

Crafting an aesthetic through *mopix*, then, evolved through the development of a sense of mutual awareness and empathy. This evolution was represented not only in the way people described their own photos, but also in how they related to the photos shared by others. Bailey, for example, empathized with the effort other participants put into adding the certain kind of aesthetically appealing or thought provoking twist: *"I kinda*

enjoyed it, especially, like I said, when people try to make it something beautiful or try to capture something to make a statement."

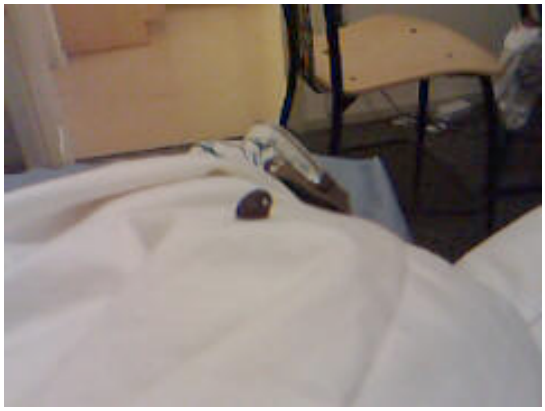

Figure 3. Jessica's photo of a piece of chocolate.

Encounters with other people's shared photographs also informed the participants' own photo taking and sharing practices. Many of them had clear expectations of what they thought was appropriate content to share within the housing community and how others might react. Occasionally, participants challenged these norms and explored new connections to others through the content that was shared and unique photo compositions. Jessica, for example, developed a particular strategy to imbue a photo with meaning targeted towards an imagined audience:

> "*This is a random photo as well. This is a picture of my backpack. It's a logo of the backpacker. But nobody actually knows it here. But it's actually quite popular in Europe and so I put it on to see if anyone recognizes it. If somebody recognizes it they would also know the backpacker brand…* ***I was curious if anyone knows it or if it is just a random thing for them"*** (emphasis ours).

The expectation that others, mostly anonymous members of an imagined audience, were able to relate and connect to one's own creations through an iconic representation or a particular way to narrate the photographic image was largely shared amongst participants. It was at this intersection of crafting a particular imagery and imagining a potentially interested and engaged audience that the act of photo taking and sharing became the site for a mediated public. For Jessica, taking and sharing a photo of her backpack was a way of crafting her own position in relation to this imagined audience. At the same time, a particular way of seeing and sharing became visible to others, potentially supporting or challenging other's understandings of what and how photos were supposed to be shared through *mopix* and in the social context of the housing community.

Like Jessica, many of the participants in the study reported that they enjoyed the embedding of "hidden" meanings within photos. Many of them contrasted these experiences with Internet photo-sharing sites such as Flickr and Facebook, which were generally used by the participants to share media with friends and pre-existing contacts. Kelly, for example, commented:

> *"I enjoyed "the versatility of sharing it… You know on the Internet you can share your photos publicly but people don't really look for your photos publicly there.* ***But here you know that a random stranger will see it. I like the idea to show somebody who doesn't know me to show them a photo."*** (emphasis ours).

Figure 4. Jessica's photo of a backpack

Members of the public that emerged around *mopix* use, consumption and production did not develop these notions independently from, but in concert with one another in a self-organized fashion. Individuals learned and developed these shared understandings by testing reactions of others to their own photos, evaluating the photos uploaded by others, and observing the reactions of the wider housing community members to those photos, thus bringing into existence the "social space created by the reflexive circulation of discourse." Jessica, for example, anticipating possible reactions to one of her photos, expressed concerns about image quality: "*I wanted to capture some of the rabbits on campus, but I couldn't zoom and so you didn't see the rabbit but only grass. And then people would be like, what the hell… and that was kinda pointless* [to share]*."* Even when focusing on a seemingly simple and straightforward subject, Jessica—like many other users—was concerned about demonstrating her skills and ability to express herself creatively through the visual medium.

Although users did not necessarily develop close relationships with one another – indeed, they remained mostly "a relation between strangers" throughout the deployment of the system – they often discovered points of connection through the mutual interpretability of their individual and collective productions. While the process of media creation and motivation for sharing varied amongst participants, as did each person's notion of aesthetic production, they began to develop a mutual interest in coordinating their "publications," relating their creations to one another and to address a particular kind of audience. It is through the sharing and collective exploration of these aesthetic norms and sharing conventions that the participants began to think of themselves as members of a broader audience or public.

4.1. Seeing and Crafting the Appropriate

Over the course of the deployment, participants developed a shared perspective on the appropriate object to be captured and eventually shared. While there were not any pre-defined rules or norms around photo sharing within the student housing community to structure sharing behavior, participants considered what was appropriate to share in concert with the pre-existing social and visual design of the community space. Residents of the community—both those capturing and sharing photographs and those just viewing—collectively shaped the notions of desirable content and composition through

mopix. In what follows, we illustrate how this shared sense of the appropriate was based both on participants' previous sharing experiences with other social media applications and on practices that emerged through the use of *mopix* at the particular locality of the housing community.

The student housing community's public areas were designed to encourage opportunity for social interaction, providing a series of amenities such as sport facilities, entertainment and game centers, shared grill and fireplace areas. The community is reachable by a university bus system or by car, thus providing visual and infrastructural separation from its cheaper counterparts on campus, while at the same time guaranteeing convenient access. Most of the residents, thus, tend to organize activities within the social areas provided by the community, or somewhere in between the community and campus. Not surprisingly, then, most of the photos that residents captured and shared were taken within the vicinity of the student housing community, on campus, or at their workplaces. Given these everyday settings, the content of the shared photos tended to depict the mundane through the capture of everyday objects, spaces and activities. Participants developed a variety of techniques to "see" and record the odd and humorous in the mundane, making use of unusual camera angles or adding annotations as they were uploading pictures through *mopix*. While these practices were not necessarily in resistance to the somewhat rigid interpretations of leisure and social activity that the housing community prescribed, they constituted dealings with and at times also re-interpretations of the existing social norms.

This was apparent, for example, in a series of photos that depicted everyday objects such as books, drinks, food, keyboards, backpacks, key chains, flowers, shoes and street signs – the minutiae of everyday life on campus or in a student housing community. From an outsider's perspective, the photos might appear to be a random collection of images with no apparent trend in content, but what came to the fore in our conversations with the participants was that the decision to share photos was often predicated on a sense of "appropriateness" that emerged over time through interaction with *mopix* and in relation to the social dynamics that participants anticipated as part of the student housing community.

Figure 5. Jessica's photo of a spray-painted image on a walkway.

Jessica, for example, described how she encountered a curious spray-painted picture on the pedestrian walkway on her way home (see Figure 5). Surprised, she stopped and

captured the scene as something that was "odd enough" to share with others through *mopix*. In later discussions around photo sharing through *mopix*, she referred back to this incident as a common pattern across the photos shared, by her as well as others, with the system: *"…the odd things that people find interesting* [to share]. *It's like in Japan, where they have random toys and they have no use for it, but it's really fun to look at."*

In this assertion that people shared "odd things" they "find interesting," Jessica brought to light her belief that others – like her – would connect to the content in similar ways as she experienced it herself. Throughout our interviews, participants described anticipating reactions from others to whatever they captured. Sometimes, this concern for others and for the ways in which one's own creations were received manifested itself in worry over the quality of a shared photograph: *"I tried taking a sunset. But the camera features are limited. I couldn't zoom. So I decided not to share it. I didn't want somebody look at a blurred picture, and be like what is this?"* –Andy

Like Andy, many participants chose not to share photos that they considered to be inappropriate in terms of both image quality and content. For some participants, then, encountering the right kind of photo opportunity and crafting the appropriate photo to be shared could be accomplished by using "the right kind" of capture technique, as was evident in Joseph's case: *"And* [with] mopix *I just concentrate on one good* [photo] *because I know it's going to be online so I just focused on one good one. Good angle. Try to focus on the angle and then I just take it."*

4.2. Negotiating the Inappropriate

The negotiation of what to share was not always resolved as quickly as the cases described in the previous section. For many, sharing the right kind of photo was about carefully choosing photo content and the framing thereof. Jessica and Carrie, for example, emphasized the importance of not getting "too personal" with the content they depicted. Both also expressed concern for not wanting to "offend others." Jessica thus deliberately avoided captures of herself and friends, explaining:

> *"…I think I did see pictures of other people. Like them and their friends something I wouldn't have done. But they did I guess.* ***It's kinda random to take pictures of your friends. Are you saying you are popular or what? That's kinda weird.*** *Besides advertisement it's weird, to have pictures of a lot people – like you and your friends - on the wall.* ***What is the motivation to put that up there****. Why would you put up pictures of your friends up. Maybe so that others are like.. kinda to say, oh that's that guys – possibly"* (emphasis ours).

Jessica associated self-portraits and images of people with a lack of creativity in that they neither provoked the audience nor communicated anything beyond what she viewed as self-assigned popularity. She deemed such pictures as "too personal" and "weird," attributing a quality of self-advertisement and unreflective self-portrayal of the photo taker. Carrie, in contrast, did not mind seeing pictures of other people on the *mopix* displays. She was, however, concerned that her photos might invoke negative reactions from others:

> *"I took more pictures of things with mopix. And more pictures of friends with my digital photo camera. A lot of people were leaving rude comments of pictures with people [in them]. And if I take pictures of friends, I didn't really want that to happen."*

What we see here is that despite the quite diverse interpretations of what constituted an inappropriate photo, a shared understanding of what kinds of photos would engender a positive viewing experience for people emerged over time. To produce content that seemed both appealing and appropriate for the anticipated audience often posed a challenge for study participants. This was at times due to the limitations of the technology itself and at other times related to participant's perception of their own relationships to others and of the social dynamics of the community space more broadly. At the same time, participants encountered challenges in producing content they deemed appropriate to share, including limitations of the technology that resulted in low-quality pictures. Furthermore, people could not always relate to the content of a photo. The notion of appropriate, then, evolved over time and through continuous interactions with the system, the visual object (shared photos on the *mopix* displays), and the direct and indirect interactions within the group of media producers and consumers.

5. PARTICIPATING IN A PUBLIC

In the context of *mopix*, a public evolved around both the visual text of the digital media and the discourse of what constituted appropriate and meaningful content of the creations within the student housing community. Participants in our study, however, did not generally interact directly with each other, nor were their photos directly "sent" as messages to each other. The communication that *mopix* supported was diffuse, achieved through the comment feature on the displays. Nonetheless, users recognized themselves as connected through mutual understanding and empathy. This sense of connection is similar to the notion of engaging with like-minded people that underlies the framing of publics. In contrast to interacting with institutionally bounded groups (*e.g.*, colleagues at work), relations and interactions were less structured by pre-existing frames of reference; rather, they are brought into being through the media sharing and the visual discourse around the shared photographs in the first place. In this section, then, we provide details on how interactions through media sharing with *mopix* can be understood through the analytical lens of participating in a public.

With *mopix,* a public was called into existence through the visual discourse around shared media. The discourse revolved around considerations of what constituted appropriate imagery within the evolving collective aesthetic. A photo shared through *mopix* may simultaneously reflect, challenge, and develop the visual and aesthetic conventions at work in the housing community but only in the context of it being shared. In other words, it needed to be embedded in a circuit of transmission and reflection. A public was not created through the production of a single photograph, but rather, through the ongoing reflexive visual practice of looking, sharing and interpreting. Although one could not possibly relate to every photo depicted on the displays, study participants highlighted that they enjoyed the feeling of "being on the same mission" or "being in the same boat" of capturing photos that other people could relate to. They were able to learn what other people might find aesthetically interesting to share. Although mutual engagement through photo taking and sharing created a feeling of connectedness among participants, it did not expand beyond a lightweight form of closeness, as Jessica pointed out: *"So you didn't feel closer, but at least you feel like you are interacting. There is something there… it's like being in the same boat, definitely."*

People became oriented towards one another through the shared visual discourse that took place around the diverse mobile photo sharing practices. In some cases, the quest to

find those like-minded others of the public to which individuals perceived themselves to belong was more explicit. For example, Carrie, when describing one of her photos (see Figure 6), commented:

> *"Hitchhiker's Guide… I was taking the picture while I was reading it. This is kinda a fandom thing. So everyone who likes it, really really likes it and wants to talk about it.* ***And so I thought the comments might be interesting. So I started to take pictures of geeky books to see if anyone left comments to see if anyone would say, 'Hey you are such a geek too,' kinda to find like-minded people."*** *(emphasis ours)*

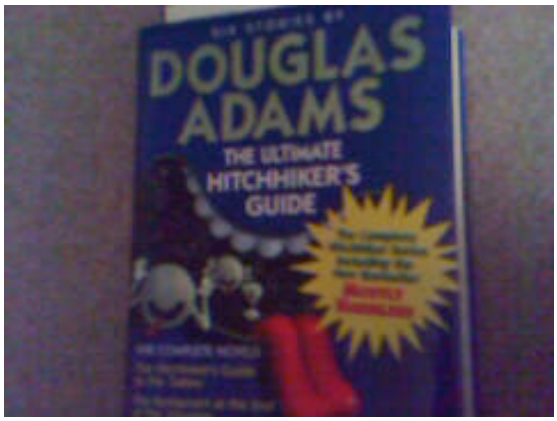

Figure 6. Carrie's photo of Hitchhiker's Guide.

This example is particularly interesting in that it explicitly draws us back to Warner's initial sense of a public as it relates to shared discourse around mass media. Here, Carrie was using one type of media (photo sharing) to invoke a specific reaction within the public surrounding another type of media (print). By appealing to these like-minded people, she hoped to trigger *"comments [that] might be interesting"* and perhaps reveal a means of connecting to the public of which she recognizes herself to be a part. The shared photos, then, constituted pointers to other people's ways of looking at this particular public, examining what it means to the photo taker, what it could mean to the onlooker, and how one wants to be seen as a participant of a public and how one conceives of others. A public, then, evolved out of mutually informed ways of looking at the world while simultaneously being subject to a careful process of how one wants to participate in the makings of it.

6. DISCUSSION

In the preceding sections, we demonstrate how two interconnected issues – collective aesthetics and publics – manifested themselves in our deployment experiences with *mopix*. The notion of publics provides us with a way to understand how participants engaged with *mopix* beyond the level of simple user-system interaction in two ways. First, it draws our attention to the temporal dynamics and the evolution over time of a set of aesthetic conventions and expectations. Second, it provides a vocabulary for discussing the experience of *mopix* as a collective experience, rather than the sum of

individual experiences. It points to the evolving sense of oneself as part of a collective oriented around the production and viewing of images.

Although we found publics useful in our engagement with *mopix* and have thus used it to motivate our use of the concepts and to ground its relevance to HCI research, it has a broader scope for other areas of inquiry. When we abstract away from visual imagery, *mopix* is an example of a trend in social computing and media sharing applications, in which people are communicating through some mediation to an abstract and somewhat generalized audience, who may themselves also be producers of information. This trend broadly characterizes social applications, *e.g.* citizen science projects such as pervasive environmental monitoring [Paulos *et al.* 2008], media sharing systems [Baumann *et al.* 2007], and mobile social networking technologies [Ito and Okabe 2005].

We suggest that the value of Warner's conceptualization of publics and applying it to the analysis of user-generated content and media sharing practices in HCI is three-fold. First, it begins to give us a way of thinking about specific, heterogeneous audiences, rather than the single undifferentiated "public." Second, it incorporates the reception and response to media and performances as part and parcel of the creation of a particular kind of relationship with production, which is especially useful when considering user-generated content and collective participation of the sort engendered by many media sharing applications. Third, it draws attention to the role of the medium itself in shaping the emergence of particular kinds of publics. Understanding and engaging with the medium—and its technological underpinnings—is of particular interest and importance when considering the experimental and open-ended nature of most experiences with computational systems. To make these connections clear, we return to the premises for the concept of publics that Warner presents, which we briefly noted earlier, and tie it back to our discussion of *mopix*.

A public is self-organized. In contrast to rendering an audience as explicitly crafted or shaped, the notion of a public focuses on an emergent sense of collectivity. Yet, a public remains an object of the imagination: it is brought into being through the collective imaginings of individuals. It is, then, an emergent phenomenon. A public is not the same as a "user base," nor is it the same as a deployment site, but rather, it is a phenomenon that comes into existence around the use of a technology. In social computing systems, we must deal with how boundaries of access and the availability of technologies inherently limit the scope of publics, and yet, the publics for these technological systems remain self-organizing. The property of self-organization turns attention away from the features of technology, or even the circumstances and properties of technology use, as the definitive boundary conditions upon participation in publics. Instead, attention is placed on the experiential qualities of use and the relationship to pre-existing and emerging value systems through the use of the technology. With *mopix*, this was particularly salient in the emergent practices surrounding seeing and crafting appropriate content among users of the system in the housing community.

This is not to say that a public that comes into being around a computationally mediated system exists independently of the system's design and affordances. Rather, the means of creation and circulation we observed during our deployment of *mopix* emerged in relation to the system design. However, it was neither fully structured nor defined by the design. The specificity of the visual discourse around *mopix* emerged at the intersection of the designed system, the pre-existing social climate of the deployment site and the value and belief systems that the participants brought with them when they enrolled in the study and revalued through the visual discourse.

A public is a relation between strangers. To say that a public is a relation between strangers is not to say that two people cannot be members of a public if they know each other, but that the public exists in the collective positioning of oneself into a larger group. Two aspects are central to this issue: first, the relation that arises is between members of the public (rather than between producer and consumer); and second, the public is conceived of as a generalized set of people rather than a specific, or pre-defined set. The relevance here to HCI more broadly is the way that technologies themselves provide an imagined connections to putative others. The notion of publics allows us to question the common view that the relevance of a computational system lies in its capacity as a tool to achieve an *a priori* identified goal shared by a collective user group. The *mopix* deployment provided a level of social ordering through a particular socio-technical site. Warner highlighted that a public does neither necessarily exist independently of nor does it always conform to social norms and ordering. Similarly, although certain aspects of *mopix* were certainly goal-driven (*e.g.,* taking and sharing photos) and motivated by the socio-technical structure of the deployment site, the application gained relevance for study participants as a site where social values and stranger relationships could be imagined, produced, and engaged with over time (potentially even beyond the deployment). How do we engage these new forms of participation and creation in our studies? How are we currently engaging potential longevity of publics beyond the duration of user studies and deployment cycle for system analysis and implications for system design? Aside from gaining insight into the situated usage and its implications for future iterations, what else is being produced, socially and culturally, during a technological deployment?

Most systems described in HCI research are prototype deployments of advanced technologies (as, indeed, was *mopix*). As such, the relations to a public that are commonly developed throughout these deployments are ones that position people as participants in a research endeavor and/or user of a system. This suggests, first, that we need to understand how people begin to conceive of themselves as somehow allied in interests with designers and researchers through their participation in forms of technology evaluation and adoption, and, second, that we should be conscious of these considerations in people's experiences with prototypes and experimental settings.

Growing research in HCI on participatory platforms such as Second Life and Facebook through which users both consume and produce content, as well as ongoing research on Participatory Design [Leahu *et al.* 2008, Sengers *et al.* 2005], have challenged previous dichotomies of design and use. Often, however, the framing of "participation" in HCI currently implies a classification of difference between users and designers especially with respect to the designer's competency [Cohn 2009]. It is here that we found Warner's notion of publics particularly useful, because it allows us to point to an understanding of participation that moves beyond the dichotomy of creation and use or appropriation. What this perspective allows us to see is that the move away from the separation between designers and users is already implicit in the development of new media platforms and design paradigms such as supporting user-generated content. Take, for example, an environment like Second Life or World of Warcraft, in which the functioning of the social and material world is predicated on the active participation, content creation and design of the "end-user." Boellstorff has described these new forms of participation in the creation of digital media as a "creationist space" that leverages user engagement to motivate long-term participation and continuous motivation to contribute and engage [Boellstorff 2008].

Similarly, *mopix* was as much made through the visual discursive practice we describe in this paper as it was through our design and software-hardware assemblage. As such, a public came into being at the intersection of these practices. However, it was not understood as governed by the system design, but in relation (or opposition) to it. Although it is evident that analytical divisions between designers and users cease to be constructive in environments like Second Life, we suggest the relevance of such an analytical move for media sharing practices such as *mopix*. To conflate use with consumption, or participation with design, would mean to overlook these very productive practices of visual discourse, appropriate imagery and aesthetic valorizing.

The address of public speech is both personal and impersonal. The tension between personal and impersonal, which is not a tension between one and the other, but a dialectical relationship between the two, was very directly manifest in *mopix*, given the diffuse audience and the fact that everyone was a resident of the housing complex and therefore personally implicated in the visual images. The major concern here is that the personal lives within the impersonal at all times. This tension can also be seen within, for example, Facebook updates, which address specific and general audiences simultaneously [Ding and Patterson 2008]. This work demonstrates the need to recognize this tension during both design and analysis, in particular for which locations and activity records might be reinterpreted as broadcast communications. As a community of researchers and designers, we must recognize these dual uses and allow people to emphasize one or the other or both.

A public is constituted through mere attention. A public exists purely through being addressed, in contrast to, for instance, social classes that might be brought about through economic relations, or political movements brought about through mutual interests, and so forth. This suggests that we should look within the circumstances of technology use and appropriation for the constitution of publics, rather than seeking them within external arrangements of people and pre-assumed social groups. However, Warner emphasized that the simple existence of particular media is not sufficient for a public to come into existence, that it requires a specific public to address and pay attention to itself; or as Warner [2001, p. 67] put it: "The circularity is essential to the phenomenon. A public might be real and efficacious, but its reality lies in just this reflexivity by which an addressable object is conjured into being in order to enable the very discourse that gives its existence." The relevance here lies in the notion of circularity. The publication of a book does not automatically create a public. It is the attention of its readership to others who read and relate to the book that brings a public into existence. What this suggests, then, is that there is value in situating analysis at the intersection of pre-existing social structures, *e.g.* arrangements of collaborative groups at work, and emergent collectives and imaginaries—that is, the set of values and norms common to particular groups that the system makes visible. We stress the importance of recognizing that the modification of systems and active creation of digital content by users is not disparate from discursive processes of imagination and meaning making. A media sharing application becomes meaningful not only through the digital content created, but also through the ways in which people connect the content to other spheres of life, express value and belonging.

A public is the social space created by the reflexive circulation of discourse. In *mopix*, we see clearly the way that a public – a sense of shared participation in the consumption and interpretation of photos – arises out of the circulation of those photos themselves. Participating in this public involved the acts of crafting photos appropriately and reflecting upon those uploaded by others. More generally, though, the circulation of

discourse – text, media objects, and commentary, which are automatically derived or creatively produced – is a central feature of the large class of interactive applications that we have suggested are driven by an interest in communicating with and to a generalized audience. Inverting Warner's statement here, we might say that the reflexive circulation of discourse inevitably generates publics and so it is important to recognize the potentiality of a public when considering interactive systems. For example, a social application like Facebook affords the circulation of images, comments, texts, updates. These creations are not only part and parcel of being a Facebook user but also allow us to participate in a multitude of publics simultaneously; *e.g.,* we can become a member of the "green IT" group founded by our colleagues in HCI, while we also connect with study participants through the same platform. These social spaces are central to the experience of using Facebook. An analysis of people's experiences with a system cannot be considered independently of the media through which their experiences are generated.

Publics act historically according to the temporality of their circulation. As noted earlier, Warner's concern with the historicity and temporality of publics is bound up particularly with the cycles of media circulation: daily newspapers, weekly television shows, annual seasons, and so on. Issues of temporality are especially important in the context of media sharing applications, given their embedding within a world of instantaneous transmission and continuous connectivity. Baudrillard [1998] discusses the "ethics of pressured performance" that characterize the way that time pressures move from domains of work to domains of leisure (*e.g.,* the pressure to be active and efficient in how one spends leisure time on vacation). Similarly, the temporality of user-generated content like *mopix* photos or Facebook status messages creates pressures for both staying up to date up and responding. As Warner [2001, p. 90] notes, "Not texts themselves create publics, but the concatenation of texts through time." The temporality of circulation, then, is central to the emergence and development of publics. Extending this thought, we note that texts do not exist in isolation from each other; if the sources of current events incorporate daily newspapers, hourly radio broadcasts, and minute-by-minute updates online, then digital media potentially destabilizes and reconfigures the emergence and formulation of publics by placing them within new spatial and temporal frames. We suggest that future analysis of digital media in HCI can gain from this insight by recognizing how individuals and collectives negotiate these multiple spatial and temporal frames and how identity is managed across them.

A public is poetic world making. By "poetic world making," Warner emphasizes that discourse itself – or, in the case of computational systems, the circulation and commentary upon media objects – is the means to bring social arrangements into being, rather than arising purely within existing social arrangements. The importance of this point is that it speaks to the power of computer-mediated communication. It argues that, rather than simply supporting and reinforcing existing social groups and behaviors, social computing applications create the possibility of new arrangements. This insight is crucial given the growing interest of HCI researchers in the kinds of social and cultural practices of technology use in places other than the United States and Western Europe. Although digital media might lead to new social practices, this does not happen independently of local conventions, politics and cultural norms. We have seen this in the case of *mopix,* where a sense of aesthetic and what constituted an appropriate photo to share evolved in relation to prior conceptions held by our study participants and to the pre-existing social space of the housing community in which it was deployed.

7. CONCLUSION

In this paper, we argue that the concept of publics, drawn from media theory, is a useful tool for understanding the experience of generalized communication mediated by computational systems. In our exploration of the use of a mobile photo sharing application, *mopix*, we generalize from the question of how information is shared and distributed to others, focusing more on how those communicative acts position both producers and consumers and create the conditions for the emergence of a range of publics in mediated interaction. The emergence of a collective aesthetic – a way of relating to the qualities of shared media as a group – underscored the relevance of this account, which focuses on the imaginative acts of the audiences of media events rather than an author-directed concept of "audience." In light of current interests in participatory cultures, user-generated content, and their intersection with mobile and ubiquitous applications, we suggest that this approach has much to offer.

What we suggest, then, is not a technologically deterministic view—that emergent computing technologies such as social media applications automatically generate publics. On the contrary, in this paper we attempt to expand the conversation to embrace linkages between socio-technical practices that are bottom-up, side-to-side and top-down. Neither do mobile and social computing technologies cross every social and economic boundary, nor do they prescribe day-to-day action. We suggest that it is productive to move beyond framing media creations simply as "use of a system." We encourage considering these practices as diverse forms of creation and consumption around and through these new technologies, and the ways in which they, at times, challenge limitations of a technological system and existing norms, and at other times, feed into pre-existing societal and cultural value systems. Employing the notion of publics, then, allows us to emphasize exactly these dynamics of challenging versus acting upon pre-existing value systems and to point to the ways in which individuals position themselves in relation or in opposition to a dominant discourse as members of larger collectives. We have also highlighted that the notion of publics provides an analytical lens to engage with the temporal: to consider how people relate to their own media creations and those of others over time, and how these creations are continuously modified but also shape social practice, through the production and consumption of a variety of discourses and media content.

This approach has some important implications for analysis and design practice in HCI. First, it begins to give us a way of engaging emergent forms of participation in the production of digital media. Rather than considering these practices as yet another "use of a system," we suggest paying attention to a variety of uses and participants that do not necessarily comfortably fit the more widespread image of system use in HCI [Satchell and Dourish 2009]. This extends use, for example, to the production and consumption of new materialities, but also of both textual and visual discourses. Questions of who creates and what is being produced in these participatory cultures raises new challenges for understandings of design in HCI. Second, it draws attention to the role of the media object itself and the ways in which digital media is produced at the intersection of technological, social and discursive practice. If we move away from the focus on use and in particular beyond an understanding of temporally-bounded use and user studies, we begin to see the ways in which individuals not only use but imagine themselves as members of multiple, potentially networked publics over time [Varnelis 2008], and how technology is a site of social, cultural and digital production. Third, an engagement with the production of publics through technological systems provides the HCI researcher and

designer with a new analytical tool kit and set of questions. In more common approaches that focus on user-audience relationships, emphasis is often put on the question of how technology can be designed to support specific goals and needs that a user or user group might have. With our approach, we are not opposed to this endeavor. On the contrary, the analytical lens of publics constitutes a complementary tool set that allows the researcher and designer to explore questions such as: how do people position themselves in relation to different collectives through their technology practice? What kinds of imaginaries and discourses are produced alongside media sharing and productions, *e.g*. how do people negotiate their own contribution and interpret what others are sharing? This approach can be usefully employed in both ethnographic efforts and user studies to explore the relationship between immediate goals such as using technology to connect to family members and the role of technology plays in positioning oneself in larger debates, concerns and discourses. Fourth, it incorporates the continuous reflective responses to media as an aspect of creation and participation, which is particularly useful when considering HCI's increasing interest in user-generated content. Traditionally what we understand of a technological system and how we assess technological use assumes a single, technologically and socially-bounded site. The approach of publics introduced in this paper allows us to consider the connections of various types of media as they are imagined, built and designed by consumers and producers alike.

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Statement of Previous research

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