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Pictorial Practices in a “Cam Era”

Studying non-professional camera use

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UNIVERSITY OF TAMPERE
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Looking back to the beginning of my interest in pictorial practices in a “cam era,” I have come to realize that questions of images, cultural practices, and pictorial media have long been with me. Having lived in different countries and interacted with very different kinds of people, I have noticed similarities and differences in the ways people see and explain their lives in particular contexts. Of particular interest to me has been to focus on shared ways of doing, not only stressing specific differences – for example, looking at ways in which we seem to be using similar devices in similar ways, sharing a way of “doing” that is not necessarily bound to one specific locale. Taking a bus, using the metro, and driving a car are good examples. Although there are differences in how we perform these actions, there are important restrictions that constrain variation. With a special interest in pictorial media and their uses, I have come to notice patterned similarities in the use of cameras and in pictures taken with them.

These observations contradict the idea, still commonplace, of a shared culture among people living close to each other that differentiates people living in one place from people living somewhere else. In order to understand these similarities between different people, possibly living far from each other, I have focused on the specific media that people have at their disposal, influencing the practices in which these people are involved. For one reason or another, the focus has remained on pictorial media in general and, quite often, on camera use in particular.

The understanding I have gained has been gradual and owes a great deal to both academic literature and several people I have met, in various settings. Whereas the literature is to a great extent referenced at the end of this work, I wish to thank the people I have met, in both informal and more formal settings, for providing me with intellectual feedback and encouragement. I feel privileged for the kind of input and support I have received.

After completing my M.A. studies in cultural anthropology in 2003 at the Philipps-Universität Marburg in Germany, I realized that I had started to understand a little of the thinking that others had developed on the relevant issues. But instead of having clear answers, I had a hunch of how to continue to address these questions.

Through discussions, the supervisors of my M.A. work supported my continuing interest in images and pictorial media, so I enrolled at the university again,
as a Ph.D. student. The initial research idea focused on participant observation with stakeholders who create images in public urban space, mainly advertising agencies and political activists, for gaining understanding of the similarities and differences in their approaches to use of images. For many reasons, this study was never realized in the form originally conceived, but in hindsight more important was the encouragement that I received to delve into research areas that were new to me, lying between established academic disciplines. In the time between 2003, when I completed my M.A. studies, and today, many things have happened that have left their mark on my thinking and on the issues that are of interest to me.

In 2003, I received a three-year Deutsche Forschungsgemeinschaft (DFG) grant for enrolling in a graduate-studies program established by Hans Belting and his colleagues, called “Image. Body. Medium. An anthropological perspective,” at the Karlsruhe University of Arts and Design, in the Department of Art History and Media Theory. This time was important for me as I strove to understand developments in Bildwissenschaft and broaden my views on the use of images.

Here the directors, professors, postdoctoral scholars, and my fellow PhD students were important partners helping in suggesting related literature, clarifying arguments, and providing insights on a broad range of topics. Besides Hans Belting and Beat Wyss, I found that Jutta Held, Norbert Schneider, Ursula Frohne, Martin Schulz, Birgit Mersmann, Stefan Ditzen, Markus Buschhaus, and Margit Rosen were of special importance in supporting my work in my years at Karlsruhe.

In 2005, during my last year at the graduate school, I moved to Finland and worked first as a researcher in residence at the Finnish Museum of Photography. The supportive atmosphere and our reading circle focusing on photographic theory were especially helpful for me. I want to thank Asko Mäkelä, Elina Heikka, Jukka Kukkanen, Anna-Kaisa Rastenberger, Anne Isomursu, Ossi Asikainen, Kati Lintonen, Kati Kivinen, and Elina Suoranta for providing thoughtful discussions and support.

In late 2006, I started my current work as a researcher at the Helsinki Institute for Information Technology HIIT, a joint multidisciplinary institute of the University of Helsinki and Aalto University. The research environment differs from the earlier venues of my work, as a rich environment including computer scientists, legal scholars, economists, and cognitive and social psychologists. At HIIT, I started to work on a wide array of research projects, with various colleagues introducing me to the
importance of information and communication technologies in everyday life. My colleagues in the primary research group I have belonged to, Self-Made Media (SMM), have taught me a great deal about our relations to things, as well as about how ICTs are actually conceptualized, built, and designed. Risto Sarvas, Mikael Johnson, Jaana Näsänen, Vilma Lehtinen, Sami Vihavainen, and Kai Huotari have been most influential in this. Various different people with an affiliation to SMM’s “sister groups,” among them Olli Pitkänen, Antti Salovaara, Antti Oulasvirta, Sakari Tamminen, Vesa Kantola, Marko Turpeinen, Herkko Hietanen, Suvi Silfverberg, and Airi Lampinen, have been my discussion partners on issues described in this thesis, many co-authoring academic articles with me, usually related to different kinds of research project work. Some of this joint work is an important basis for this work presented.

For continuity in changing settings, participation in academic research networks with colleagues who share a background similar to mine has been of special importance to my academic work. I have been active in two NordForsk-funded research networks, the Nordic Research Network on the Mediatization of Religion and Culture and the Nordic Network for Visual Studies. In these, Johanna Sumiala, Matteo Stocchetti, Anne Stensvold, Janne Seppänen, Arni Sverrisson, Karin Becker, Paula Uimonen, Minna Räsänen, Kim Rasmussen, Ida Winther, and Trond Waage in particular have provided me with novel insights, acting as supportive discussion partners. I am happy to continue joint work with some of them, and with many new faces, in a third network, the Nordic Research Network in Digital Visuality, which has recently received funding for its operations. Additionally, colleagues in the DFG-funded research network Medien der kollektiven Intelligenz work, from various vantage points, on similar questions to those I ask here with respect to networked cameras. Here too, the time and support provided are of special importance.

After few years of work as a project researcher at HIIT, I decided to take some time off to reflect on the work done and compile a PhD work that would reflect both my educational background and the work I did at the research institution. Since I was not living in Marburg, had been busy with work, and also my earlier supervisors from my time there had left, I agreed in 2009 with Janne Seppänen, from the Department of Journalism and Mass Communication at the University of Tampere, that Janne Seppänen would be the supervisor of my PhD research with a focus on networked
cameras. After several meetings, the two of us agreed that a monograph extending and tying together work that I had published in articles would be the focus. The Finnish Museum of Photography again provided a desk for me to work at, as well as a supportive atmosphere encouraging that work. I finished the first draft in 2010 and a second version, back at my desk at HIIT, in 2011. Janne’s comments and the challenge of full synthesis of the work done were especially important as I prepared the final version, as were the supportive environments of the Finnish Museum of Photography and HIIT.

Since I strongly believe in the value of original empirical research, I must stress the special importance of those studied for this kind of work. Various people, in various settings, have kindly allowed me to interview them, observe their behavior, and look at their pictorial material, and they have answered at times rather odd (and, at others, somewhat clearer) questions. As is usual in social scientific work, the individuals studied have been given anonymity and, accordingly, are not acknowledged by name here.

My colleagues Risto Sarvas, Jaana Näsänen, and Antti Oulasvirta have kindly agreed that I may rework for inclusion in this PhD work empirical material that we have together worked on and published. Additionally, Tiina Neuvonen collected some of the empirical material on which my analysis of one case study is based. This has been especially valuable. In all cases, I have reworked our earlier arguments, extending the discussion and tying it to the larger research questions of this specific PhD project. The sections for which this is the case are marked by means of individual footnotes in the text.

Draft versions of the PhD work have been commented on by Janne Seppänen, Mika Elo, Sakari Tamminen, Mikko Villi, Risto Sarvas, Airi Lampinen, Mikael Johnson, Mikael Wahlström, Sami Vihavainen, Jaana Näsänen, and two pre-examinators, Harri Laakso and Peter Bräunlein. Their thoughtful comments have been especially helpful in clarification of the overall argument and presentation of the analysis. As a non-native speaker of English, I have found Anna Shefl’s proofreading especially valuable for making the text easier to read.

This work has over the years received dedicated funding from DFG and the Börje and Dagmar Söderholm Foundation. Some of the empirical research material was originally collected and worked on as part of funded project work at HIIT, at
times including several people. The final version of this PhD dissertation has been written with support from project work funded by the Emil Aaltonen Foundation.

Research as an academic exercise owes a debt to other social settings besides academic literature and to others than work colleagues. Since these are of less interest to those who might actually read this work, I will only briefly thank the friends, especially in Finland and Germany, who continue to remind me of all the interesting things we can do in our lives. You know who you are. My grandparents, parents, and siblings provide for a social network of support that is very important and helpful in balancing different roles in “surmodernity.” The same is true of my newer relatives, and especially true of Minna and Eero.

Thank you all.
Introduction

One day while sitting on a tram on my way home, I noticed a woman in her thirties asking another passenger whether it would be okay to take a photo of her since she liked her hair and would like to get a similar haircut. Later, when passing a magazine stand at a local department store, I couldn’t help noticing the number of magazines dedicated to hairstyles, with the titles *Hiusmuoti*, *Hiustrendit*, and *Hiusideat* (referring to hair fashion, hair trends, and hair ideas, respectively). These magazines consist mainly of photographs of women with different hairstyles, with surprisingly little text attached. These magazines can be used for getting ideas for new hairstyles, and it is quite a straightforward affair to carry the magazines to a hair salon and ask for a haircut similar to the one depicted. This example is one of hundreds – more accurately, thousands – pointing to the interplay between images and bodies in the course of everyday tasks.

I argue that images are, as in the above example, well understood in the context of specific everyday practices. The use of images is often not tied to a specific medium (such as a photograph, film, or oil painting); rather, images in a way travel from one medium to another, and in quite a few cases our bodies serve as media for images (see Belting, 2001). In the above example, the haircut the tram passenger sports is photographed with a technical medium and later transmitted, with the aid of a hairdresser, to another body, wearing as a result the same image and displaying it again for others to see. The magazines named have professionalized and commodified this specific transmission of images, and their producers are able to make a living from it, at times generating shareholder value. This is only one example among many others in which our everyday image use is transmitted via professional stakeholders, such as camera-manufacturers, hairdressers, Web-site providers, and producers of lifestyle magazines.

The use of images, with its specific people, sets of devices, and the places involved, is structured around specific pictorial practices. The term “pictorial practice” accentuates the importance of pictures for doing specific kinds of things, since the media we use for capturing and representing images for specific practices have an effect on how they can be used. It matters if, as in the above example, the image of a special haircut remains on the body of the passenger as a haircut and the woman interested in it sees and
remembers what she has seen, or if the woman has actually been able to present the image in artifactual form – for example, with the assistance of a mobile camera-phone – that can be stored, carried along, shared via online services, and shown to others.

With a dramatic increase of pictorial media around us that can be used to present and transmit things seen, such as digital cameras, mobile camera-phones, webcams, and image software, ever more people have become producers of pictures for others to see, and it is often not that clear how these pictures are used and for what purposes. Take, for example, cameras, which have become everyday artifacts that are part of ever more social situations. Cameras are used in several types of situations: at childbirth, confirmations, and weddings; while one is traveling to distant places; and in order to take day-to-day pictures for upload on purpose-specific Web sites. Cameras are used to depict dancing in a nightclub or sitting in a taxi together, going to kindergarten or being at school. Cameras are present in sexual relations, as in “sexting,” in which teenagers take pictures of themselves posing erotically and send these to each other, but just as well in relations turned hostile, when these pictures are posted later to publicly available Web sites for others to see and comment upon (Chalfen, 2009b). In short, cameras have become ubiquitous companions of our everyday life.

Besides the wide variety of situations in which cameras are used, the number of camera pictures taken has been growing greatly ever since the first photographs in the 19th century were made. The first photographers, such as Joseph Nicéphore Niépce, needed several hours, and sometimes several days, for exposing their pictures and were thus not able to take many pictures in one day. The costs involved and the know-how necessary were further factors limiting the creation of similar numbers of camera pictures to those seen today. Some snapshot photographers interviewed, taking pictures for personal, non-professional purposes, have mentioned taking up to 20,000 pictures a year, and photo collections with thousands of non-professional pictures are no rarity. Social networking sites, such as Facebook, which have become major stakeholders for sharing of camera pictures, reported in May 2007 having 1.7 billion user photos on its servers, and by January 2010 already more than 2.5 billion photos were being uploaded to the site each month, with that figure only growing.1 Hille Koskela (2003) aptly suggests that we are living in a “cam era” – an era in which images taken and transmitted with

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cameras play a significant role in our mediated social interactions. With increasing digital mediation of everyday interaction, and camera pictures converging with other kinds of digitalized information, we are living in a digitally networked “cam era.”

The pictures taken with the aid of networked cameras and shared with third parties on social networking and photo-sharing sites are increasingly sources of conflict. In recent years, mass media have reported, for example, on a student being denied a university degree because she had posted a picture on a social networking site that suggested she might have been drunk at a party (Lipka, 2008). Another person was left without a job after appearing in photos in her work uniform that the employer considered harmful to its corporate image (Simonetti, 2004). In both cases, the people depicted in the photos did not intentionally criticize the institution concerned. Nevertheless, the photos were believed by university and company representatives to harm those seeing them and to bear special evidence of inappropriate behavior. Images, that are non-professionally produced and distributed, are in these cases given specific “agency.” The images partake in social relations and have an effect on them.

In other examples, using cameras to depict our surroundings is feared. For example, in Germany, the company Google has had to restrict the publication of camera pictures taken for its Street View project because over 244,000 people have officially objected to the company’s actions. Political interventionists again, who focus on using images against images in order to draw public attention to their claims, explicitly plan their actions to appear as images that will be depicted with cameras by professional journalists and thus distributed via mass media. Here existing images of corporations, or specific social conventions of how to appear, for example, for public talks, are intentionally taken advantage of in order to subvert them for one’s political causes and to gain wide attention.

Just taking another of these few examples, we can see how the image of the haircut captured on the tram and transferred to another medium might become a source of conflict. A “cam era,” accordingly, implies an “iconoclash,” “when one does not know,

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2 Matthias Bruhn (2003) discusses that business involving images as “image economy,” whereas Paul Frosh (2003) speaks here about an “image factory.” Both focus on stock photography but underscore a general interest in camera pictures as commodities.

one hesitates, one is troubled by an action for which there is no way to know, without further inquiry, whether it is destructive or constructive” (Latour, 2002: 8).

With these developments in mind, this research focuses on two main research questions:

1) how do we use cameras at a time in which they are ever more available, and
2) how do these cameras mediate our actions?

These questions are of special importance because the use of pictures in general, and camera pictures in particular, has raised concern both in academic discussions and in public debate in mass media. Whereas some fear that “the visual” will overcome the posited analytical clarity of writing and speech, others embrace an “era of images” as a time of new possibilities in which all can participate symmetrically in a given representational sphere. Whatever the evaluative statement, it is widely believed that, because of digitization, photo use has fundamentally changed.

How do we then actually use cameras now that they are ever more available? The focus on “us,” the non-professionals, is motivated by the observation of cameras accompanying our everyday life ever more and those using cameras being a wide population, often not making a living with cameras.

Interestingly, not long ago there was little empirical research into how people actually use digitally networked cameras. Related research on non-professional photo use in a “film era” tends to stress the importance of symbolization processes for photo use. In recent years, empirical research into everyday uses of digitally networked cameras has started to document some of the ways in which these cameras are used, analyzing them often in line with previous research addressing the “film era.”

But something seems to have changed. The camera devices used today differ in many respects from their historical predecessors. Cameras, consisting of a dark chamber and a small circular opening allowing light to enter the chamber, are ever more connected to digital information and communication technologies during pictures’ capture, storage, sharing, and display. Laptop webcams, mobile camera-phones, and digital point-and-shoot cameras provide salient examples of digitally networked cameras. Pictures taken with these devices can be shared, shown, and archived with the aid of a vast array of interoperable software applications.

Through digital networking, pictures taken with cameras can be transmitted automatically to a wide variety of recipients, searched with the aid of algorithms, and
archived in various forms. Individual pictures quickly become part of global news or are taken out of their original context and used in new communicational acts. Digitally networked cameras influence this in ways that call attention to the mediation that these cameras provide for, especially since cameras are used for ever more purposes in ever more situations.

How do these cameras mediate our actions? An interesting thread can be found in recent social scientific thought, that has found increasing interest in providing models of agency in which not only is a human subject endowed with the capability of acting but things as well are claimed to have some sort of agency. Here, “agency” is understood as the power to do or act, and therefore as the possibility of influencing an existing situation (Dant, 2007; Latour, 2005b: 52; Gell, 1998). The discussants are far from agreeing on the agency that things have, let alone agreeing about its quality and amount. Some even deny any agency things might take, dismissing the roles of mediations in social action.

These discussions are usually not reflected in empirical studies on non-professional camera use. An interesting resemblance can nevertheless be found in studies focusing explicitly on the impact of novel picturing technologies. Here related research tends, in my view, to overemphasize the “agency” that specific devices take in interpersonal interaction, providing communication models that can be read as implying causal relations between specific digital devices and their uses.

In order to answer the research questions, this research is situated within a wider context of a growing body of research on images and the visual, with a theoretical perspective on pictures that is applied and extended to networked cameras and their uses. A larger context of visual orders based on related research is worked out in which non-professionals use camera pictures. Empirical case studies of actual uses are performed, and the ways in which the findings show cameras to mediate our actions are taken into account separately.

In the discussion that follows, I will trace exemplary uses of pictures by non-professionals and show how in different settings, with different people, devices, and images, pictorial practices take specific forms.

To do so, I will first turn toward interdisciplinary studies of images, increasingly popular since the early 1990s, which set out to answer 1) questions related to a multiplication in the representational sphere due to an increase in pictorial media in our everyday life but, as well, 2) methodological and theoretical challenges facing the study
of images in general, and their varied uses in particular. These studies, found under the headings “visual culture studies,” and “Bildwissenschaft,” do not give us uniform answers on how to proceed. Rather, they open a space of questions related to images, seeing, visuality, and their relations to us. The tentative answers given suggest different paths to follow, paths that take us to different authors, concepts, ideas, and empirical case studies.

In positioning this research within multiple threads of discourse on the study of images, my approach follows a call for the need of empirical work on how people actually use pictorial media. (cf. Ginsburg, Abu-Lughod, and Larkin 2002) Theoretically, it draws on the work provided by Hans Belting (2001) in his Bild-Anthropologie. Entwürfe für eine Bildwissenschaft, which has recently been published in English as An Anthropology of Images (2011), as well as on work published by scholars on practices that focus explicitly on material mediations. Belting’s focus on interplay of images, bodies, and media draws our attention to the importance of the body in seeing images in the first place but equally to the difference between images and media that allow images to become visible. This differentiation enables turning one’s attention toward symbolization processes that are of importance in seeing, synthesizing, and animating images, as well as to the material mediations that affect both the ways in which images are made visible and who has access to them. Related studies of non-professional uses of pictures tend to mention the importance of material mediations in picture use but neglect its closer analysis and focus mainly on symbolization processes (e.g., Chalfen, 1987; Rose, 2010), with only a few, recent texts focusing explicitly on material mediations in image use in a digitally networked “camera” (e.g., Cohen, 2005; Van House 2011).

Belting in his theoretical framework accounts for and points towards material mediations in image use, but he has not taken active part in social scientific discussions concerning possible agencies of things (e.g., Dant, 2007; Bloomfield, Latham, and Vurdubakis, 2010). Here actions and practices are discussed in terms of the importance of material mediations for “doing.” I apply Belting’s framework, drawing additionally from the work of scholars working on material mediations, in order to reflect on the ways in which bodies and things form specific assemblages for action in pictorial practices.

With a theoretical perspective underlining the interplay of images, bodies, and media, one that takes both material mediations and symbolization processes into
account in study of the ways in which bodies interact with images, I ask what kinds of “things” (Latour, 1993) cameras have become on account of their digitalization. In taking an anthropological approach that emphasizes the connection between bodies and images, and thus the connection between techniques of the body and the artifacts that are at our disposal, this research suggests focusing on the kinds of techniques of the body (Mauss, 1973) that are assembled and at times converged into digitally networked camera technologies. These techniques make sense only if they enable us to do something we are not able to do without them, thus enhancing our embodied capabilities, extending our motor and sensory organs, and directing sensory information into the body – thereby becoming momentarily part of it (Leroi-Gourhan, 1993; Gell, 1998).

Inspired by previous work tracing “the desire to have images spontaneously inscribe themselves on a light-sensitive surface” (Batchen, 1999: 180), this study, by means of exemplary case studies, traces desires for techniques that extend and transform our motor and sensory organs, used to direct sensory information to our and others’ bodies, affecting our imagination, memory, and the ways in which we live out our life. Here the desires for techniques to represent the seen, to see more than meets the eye, to fix the seen, reproduce representations of it, transmit the seen in space and converge it with other kinds of information are worked out on the basis of a single image on a digitally networked photo-sharing site (Panoramio), showing that both desires for techniques and, also, technical solutions for meeting them have a history that often spans at least a century, and at times several centuries. These desires for techniques uphold the fundamental connection between bodies and media, not just for perceiving images but, just as much, for the technical means in order to show them in the first place.

Theorists focusing on the increasing use of visual devices as part of social processes have importantly pointed towards the asymmetrical ways in which these materialized techniques often are implemented. With the aid of the concepts of synopticon (Mathiesen, 1997), looking together at that selected by the few, and panopticon (Foucault, 1991), the few having a total vista over the many, this piece works out the logics of two kinds of visual order (Seppänänen, 2006) to contextualize non-professional picture use as part of a larger “visual culture.” While many theorists restrict their analysis of pictorially mediated social processes to these two visual orders, I claim that these are only two among many ways of ordering the visual. These theories usually do
not take non-professional picture use into account, focusing instead on commercial imagery and methods of surveillance. Nevertheless, as will be discussed later in the work, with increasing digital mediation of pictorial practices, both visual orders, the synopticon and the panopticon, have become ever more a part of non-professional image use. Take the example of sharing pictures via photo-sharing sites that show targeted advertisements to users, an example of a synoptic setting, and collect behavioral data for economic and governmental purposes without those using the technology knowing exactly when and how it happens (a panoptic setting). Visual orders take manifold forms.

Since empirical studies of actual non-professional uses of digitally networked cameras remain scarce (cf. Chalfen, 2008), especially studies of the ways in which these digitally networked cameras mediate our actions, I will focus on empirical case studies aimed at providing answers to these questions. Because of the sheer quantity of data available, a heuristic approach is applied for coming to terms with non-professional uses of camera pictures at a time when cameras mediate ever more social interaction.

In the first case study, digital photography by middle-class men and women in Finland is traced, with findings showing continuities with a fairly early established pictorial practice I call the “Kodak culture” after Chalfen (1987). Here taking and sharing photos, as well as playing a part in them, is an activity constitutive to the creation of “family,” the “domestic sphere,” and thus specific subject positions mediated via cameras (Rose, 2010). Their particular meanings are created locally within those partaking in interacting with cameras. Comparing the findings to those of previous research, I claim that the “Kodak culture” is nevertheless a translocal practice surprisingly similar in different places, whether in Europe or the U.S.

In a second empirical case study, this research examines reasons for deciding how to share what kinds of images with the help of digital means, focusing on users of a specific photo-sharing site called Kuvaboxi. The “Kodak culture” has been mainly an invisible part of visual culture, the pictures shown and transmitted usually only to those of personal importance. Here the indexical character, related to the mediation during the use of a camera, connects those depicted and the photographs showing them. Indexicality is of special importance in explaining why these photographs are often treated as if they contain part of those depicted. Tearing them apart, sharing them to strangers, or destroying them is considered inappropriate behavior. With the
digitalization of this “Kodak culture,” people in large numbers have started to share their snapshot pictures publicly, which has raised public concern, discussed in both mass media and academic papers. Although the indexical character of photographs is still of special importance to most of those interviewed, some have started to neglect the indexicality of photographs, claiming that “a photo is not an extension of me; it’s just surface,” as one person interviewed put it, thus neglecting also the distribution of one’s self to photographs shared via online photo-sharing sites.

A third case study follows the implementation of camera devices in a novel setting, a kindergarten in Finland, where both children and teachers use mobile camera-phones to shoot photos and videos and upload them to a password-protected Web server for parents and possibly others to see. Here the pictorial practices of teachers and children differ significantly. The children are given audiovisual means to communicate with each other and their parents during their time at the kindergarten. The teachers, therefore, somewhat lose their gatekeeper position in communication about kindergarten life between parents, teachers, and children. In contrast to commercial services, such as ConnectedDay, WatchMeGrow, and Kindercam, this case study involves both children and teachers being given camera devices for use, enabling them to partake in the visual construction of their everyday life in kindergarten.

The first case studies explore the use of digital camera devices mainly in domestic and semi-public settings, although some pictures have recently been made publicly available. The “Kodak culture” discussed is a traditional pictorial practice that rose with industrialization, the increase in goods, and the related movement of people from larger family structures to urban nuclear families. Kodak, in particular, and snapshot photography in general were thus able to connect to the emerging socioeconomic conditions and gave people a way to express their situation in positive terms. For those having increasingly moved to cities and nuclear family structures because of education and work, cameras were, just as the car or later the radio and television, emblems of technical progress and carried a promise of making the right choice: the subject with a camera was a successful, modern, forward-looking individual (West, 2000). The use of digital cameras today continues this tradition in part, and here cameras and bodies share the same space. The mobile camera-phones at kindergartens again can be seen as providing means to cope with a surmodernity (Augé, 1994), which presents itself in an abundance of events, an abundance of space, an individualization of references, and the
mediation of everyday communication. Parents, in having to fulfill several societal roles, try to be “good” workers, “good” friends, and “good” parents, and they do so increasingly by using information and communication technologies. Unable to be everywhere at once, they find that the mediations used help in contracting spatial distance so that they can be present in all of these spheres, even if at a distance. The cameras used from afar, connected to from a distance, assist them in juggling these various roles. The use of Skype, photo messaging, and other means of interaction share these traits, helping to create “telepresence” (Sheridan, 2000) or “distant closeness” (Van House, 2007) between individuals, who divide their actions spatiotemporally.

The use of images for doing things is part of wider visual culture, a “camera” in which various kinds of images intermingle, at times in ways that seem to confound earlier conventions. While the non-professional uses of images in the aforementioned case studies mainly avoid conflicts and present pictorial cultures that seem to lack confrontations, discomfort, or just sad stories, a fourth case study explores a relatively novel pictorial practice, in which images are used explicitly against images. The example focuses on activists, that I have met mainly in and around Berlin, who use and modify advertisements in order to bring issues to the fore that tend to remain invisible in public discourse.

An important part of the activists’ argumentation is its visual form, the possibility of using digital electronic means in confrontations and documenting and transmitting their work with the aid of digital cameras. Images that can be easily transmitted to and via the acceleration mechanisms of the mass media are of special importance. In efforts to understand why interviewed activists use these image strategies, many arguments used are similar to those found in academic studies of visual orders such as the synopticon and panopticon, which criticize communication structures that are not reciprocal (quasi-mediated communication; see Thompson, 1995), especially the increasing use of surveillance systems and advertising in public spaces. By arguing via means similar to those they take issue with, the activists empower themselves for novel subject positions, at least if they do not get sued and sentenced for infringing immaterial property rights. In many cases, successful actions are planned with mass mediation in mind, and actors of many stripes carefully plan image acts in order to catch the attention of journalists, photographers, and photo editors. From the outset, the pictorial practices employed have
different audiences in mind than in the first three case studies, underscoring the importance of imagined audiences for pictorial practices.

This last empirical example shows how surmodernity is inextricably tied to the media at hand. With the digitalization of the camera, images are taken, transmitted, and shown to others with a scale and scope not seen just a decade ago. The devices used for imaging can be moved from one place to another; the images taken can be shared via transmission networks; and others can connect to these images from several locations, not being bound to a specific locale. This leads to increasing use of translocal pictorial practices, which at times remain short-lived. Translocal pictorial practices and the transmission of images do not substitute for face-to-face interaction but, as I will argue, mediate and thus translate it.

With various empirical examples of how digitally networked cameras are used, the final chapter focuses explicitly on the mediating roles of networked cameras. Their affordances are highlighted, the ways in which digital camera technologies, because of their materiality, enable specific kinds of uses – though not every use. These affordances, the specific actions camera technology “offers,” are in my view not automatic; they have to be “activated” (Rose, 2010) in specific meaningful practices. In my understanding of affordances, symbolization processes and material mediations converge.

Examples explored are the camera device itself serving as a mutual focus of attention at social gatherings, the indexical character of photographs affording the distribution of selves, the hybrid character of digital cameras affording the convergence of several techniques, the networked connections of cameras affording social connectivity over spatial distance, and the reproducibility of digitized pictures affording persistent exhibition and continuous archival of the images once captured.

These mediations are of special importance because of the complex interconnections that digitally networked picture systems can form. For example, distributed systems (Rammert, 2008) such as those used in digitally networked cameras may have self-activating programs that share pictures automatically on specified Web sites – say, right after a photo has been taken, as is the case in the kindergarten example. These kinds of systems automate tasks that, if performed manually, might, because they take a long time, inhibit use in the first place. Here, mediations have agency in the ways in which pictures can be used and thus in the kinds of pictorial practices that are possible with specific devices.
This research highlights ways in which cameras mediate social relations as part of specific pictorial practices, showing how "objects’ merge with ‘people’ by virtue of the existence of social relations between persons and things, and persons and persons via things” (Gell, 1998: 12). Instead of remaining within two major asymmetrical visual orders, as a significant amount of related research does, this study shows how digitally networked camera technology is empirically used, enabling bodies to represent the seen, see more than meets the eye, fix the seen, reproduce it, and transmit it to others while converging it with other kinds of information. These techniques enable life in a surmodernity, in which the individualization of references supports desires for techniques that bridge spatiotemporal distances, such as camera systems at kindergartens or the use of webcams for mutual communication. Although emancipative discourse on the uses of digital mediation has many followers, this study suggests that the synoptic and panoptic orders are still alive and well, often integrated into visual devices used in non-professional pictorial practices.

The contribution of this study is to provide the discussion of networked camera use with a focus on symbolization processes, as well as the possible agencies networked cameras take on in interaction. The results are of interest to scholars interested in the empirical subject matter but, as is my hope, also for a broader audience. The rather empirically oriented scholars profit from the theoretical work introduced, helping them engage in reflection on commonly used concepts such as image, medium, camera, technique, or affordance, to name a few. I believe that the more theoretically oriented discussions in multidisciplinary visual culture studies and Bildwissenschaft again benefit from close empirical observations of actual uses of camera pictures, which should reflect back on conceptual work. Social scientific studies with an interest in agencies of things, in the particular ways in which the devices we use mediate our actions, will find both rich empirical results and a specific analytical framework I have developed with the aid of theoretical work and empirical findings.

The understanding supplied is helpful in coming to terms with the increasing use of camera pictures in various social interactions. Besides providing heuristic tools to think with, an explicit aim is to show manifold ways in which people respond to having cameras around and thus connect to digitally networked cameras. These multiple ways are deemed helpful for reflection on how to relate to picturing technology, a choice we have to make implicitly or explicitly as we live with ever more cameras around us.
Chapter 1

Image studies and pictorial practices

Interdisciplinary image studies

The increasing number of images in everyday interaction, and not just of camera pictures, has been noticed by scholars in various disciplines, and it has been paramount in attracting academic interest. Media anthropology, visual anthropology, anthropology of media, visual studies, visual culture studies, Bildwissenschaft, and visual sociology are just some of the more recent denominations attempting to provide umbrella terms for studying images within existing academic disciplines, between two disciplines, or somewhere outside established disciplines. For example, disciplines such as anthropology and sociology have created subdisciplines called visual anthropology, anthropology of media, and visual sociology that deal with questions of visuality within existing disciplines. Media scholars and anthropologists again have teamed up under the term “media anthropology” in order to develop joint conceptual tools and understandings of media uses. Visual studies, visual culture studies, and Bildwissenschaft have been developed as collective pursuits of scholars from various disciplines, such as art history, philosophy, literary studies, media studies, cultural studies, archaeology, anthropology, and sociology. The differences between these individual approaches lie in the main focus of their research approaches, as well as in the debates that scholars engage with. Some scholars from disciplines with longer traditions of studying specific kinds of images have suggested that their disciplines as such would already suffice for studying the various aspects of images. For art history this claim has been made by, for example, Horst Bredekamp (2003), and for media studies by Mark Poster (2002).

The varying denominations point towards academic discursive struggles for definitory power – a struggle that is likely to continue for the near future. When one looks at the various theoretical approaches that are and have been suggested for studying images, there are nevertheless no grand theories that would explain all that deals with
images. Productive alliances can be made by looking beyond strict disciplinary boundaries in the complex field surrounding the study of images.\(^4\)

I am not going to review all theoretical positions on images, mainly since that is beyond the scope of this work and would in itself be a major undertaking. There are good overviews for specific positions, each focusing on its respective disciplinary background (e.g., Kress and Van Leeuwen, 2006; Pink, 2007; Held and Schneider, 2007). Additionally, each discipline has its forefigures for studying images and their use, as well as using images as research tools. Disciplines such as art history, archaeology, and film studies have focused from their beginnings on images as integral data for research, but also sociology, anthropology, and media studies have examined them in general use and have used images as research objects and research tools.

In the absence of a grand theory offering a generally accepted background for the study of images, this study is especially interested in the ways in which scholars from various disciplinary backgrounds have opened the field for multi- and interdisciplinary work on images. Here concerns raised by phenomena termed the pictorial and iconic turn (Mitchell, 1994; Boehm, 1994a) are addressed. In contrast to a claim for strict disciplinary boundaries for studying image use, or even general supremacy of one academic discipline over others, the multi- and interdisciplinary work on images tries to open the debate on images to a larger academic audience instead of restricting it a priori. Here, the relatively recent visual culture studies and Bildwissenschaft literature is of special interest for such an approach.

**Images and the pictorial turn**

W. J. T. Mitchell, a prominent figure in both visual culture studies and Bildwissenschaft, shows in his iconological works the manifold ways in which images come into being. Images may take graphic form, in pictures, statues, or designs; be optical phenomena, as when one looks into a mirror or at projections; be mainly perceptual, consisting of sensory data; be mental phenomena, lived out in dreams, memories, or ideas; or take verbal form, as in metaphors or descriptions. In contrast to images, Mitchell suggests, a picture is something that can be hung on a wall (2005b: 85), pictures being “concrete,  

\(^4\) This was noted early on for various previous studies of images as well (e.g., Edwards, 1997), but it is noteworthy that, although various efforts have been put forth for understanding distinct aspects of images, there is still wide variety in theoretical approaches and no general consensus as to any one most suitable approach.
representational objects in which images appear” (1994: 4), whereas images are any “likeness, figure, motif, or form that appears in some medium or other” (2005b: xiii). Accordingly, a visual metaphor, for example – such as “Can you see my point?” – is an image, whereas its pictorial representation on a canvas would be a picture.

Although this distinction seems straightforward, a picture being something tangible, outside our human bodies, and an image that which is transformed by a medium to become a picture, Mitchell himself seems to favor especially in his later writings fuzzy boundaries between the image and the picture. They become more or less interchangeable, since pictures, he maintains, come into being not by just hanging on walls or being integrated into photo albums but as symbolic forms as well. Mitchell extends his reading of the picture to include Heidegger’s notion of the world picture – that is, of the modern age as a “systematized, representable object of technoscientific rationality” (ibid.: xiv), a world experienced and understood as picture. Following Heidegger, Mitchell assumes that there is no getting beyond pictures and that the way to address them is via a poetics of pictures that considers pictures as if they were living beings:

A picture, then, is a very peculiar and paradoxical creature, both concrete and abstract, both a specific individual thing and a symbolic form that embraces a totality. To get the picture is to get a comprehensive, global view of a situation, yet it is also to take a snapshot at a specific moment – [...] whether it is the establishment of a cliché or stereotype, the institution of a system, or the opening of a poetic world (perhaps all three). (ibid.: xvii)

The loosening of a clear distinction between images and pictures shows a shift in the way Mitchell perceives the study of visual culture. When Mitchell (1994) introduced the notion of the “pictorial turn,” which, together with Boehm’s (1994a) “iconic turn,” called for research on visual culture using different means than we were previously accustomed to, he was only able to define the pictorial turn “ex negativo,” in terms of what it should not be considered (see as well Bräunlein, 2004):

Whatever the pictorial turn is, then, it should be clear that it is not a return to naive mimesis, copy or correspondence theories of representation, or a renewed metaphysics of pictorial “presence”: it is rather a postlinguistic, postsemiotic rediscovery of the picture as a
complex interplay between visuality, apparatus, institutions, discourse, bodies, and figurality. It is the realization that spectatorship (the look, the gaze, the glance, the practices of observation, surveillance, and visual pleasure) may be as deep a problem as various forms of reading (decipherment, decoding, interpretation, etc.) and that visual experience or “visual literacy” might not be fully explicable on the model of textuality. Most important, it is the realization that while the problem of pictorial representation has always been with us, it presses inescapably now, and with unprecedented force, on every level of culture, from the most refined philosophical speculations to the most vulgar productions of the mass media. Traditional strategies of containment no longer seem adequate, and the need for a global critique of visual culture seems inescapable. (Mitchell, 1994: 16)

What Mitchell called for were ways of dealing with images that do not treat pictures mainly as text but take their specifics into account, the additional values of images. Strategies trying to prevent the expansion of a power or ideology held to be hostile, theorized explicitly around the visual, did not seem to address how and why people actually interact with images in the first place, nor the plenitude of relations that people have with images.

Here visual culture studies, Bildwissenschaft, and, for empirical work, media anthropology are fruitful examples of novel research settings that bring scholars from various backgrounds together. Some of the research is highly successful, whereas other examples provide for disciplinary anxiety regarding the quality of the multi- and interdisciplinary research.

**Visual culture studies**

“Visual culture studies” is a widely known title for a subject of study. Early scholars in this field have roots in cultural studies and art history, and from the beginnings they struggled especially with the established academic discipline of art history. A classic research orientation in art history differs from the research propagated by scholars in favor of visual culture studies.

For pinpointing its difficult relationship with art history, the responses to a famous questionnaire on the topic of visual culture studies (as well as the questions themselves)
in the journal *October* provide interesting and highly controversial reading (Alpers et al., 1996). The questions in the questionnaire point toward a disdain for the project of visual culture, which was shared by some respondents, whereas others acknowledged the value of the project and did not maintain that visual culture studies would be a major threat to art history. Seven years later, in the newly established *Journal of Visual Culture*, Mieke Bal (2003) published an article criticizing a variety of writings on visual culture, claiming visual culture studies to promote visual essentialism. This again provoked heated responses from major voices in the field, published in the next issue. Margaret Dikovitskaya (2005) interviewed leading U.S. theoreticians about this troubled relationship, giving more background information on the still difficult relations, mainly between a broad concept of cultural studies and the discipline of art history. Questions about “high” and “low” art, “art” versus “non-art,” and the specific histories of visualities provide conflict-ridden material for the definition of the subject of study.

Meanwhile, works in great variety had already been published, claiming explicitly to work *with* visual culture. They have different areas of focus, but, interestingly, quite a few of these publications are introductions to an emerging field of study, either in the form of readers or as general introductory texts (e.g., Bird et al., 1996; Walker and Chaplin, 1997; Mirzoeff, 1999, 1998; Evans and Hall, 1999; Holert, 2000; Sturken and Cartwright, 2001; Seppänen, 2001, 2005; Elkins, 2003; Rose, 2007; Rossi and Seppä, 2007). Very soon, readers and introductions were published for specialized visual cultures, such as for black visual culture (Doy, 2000), for feminism and visual culture (Carson and Pajaczkowska, 2001; Jones, 2003), and for tourism and visual culture (Crouch and Lübbren, 2003), to name just a few. Dikovitskaya, having reviewed in her “archaeology” of visual culture various introductions, debates, and actual monographs, points out, not surprisingly, that “there is no consensus among its adepts with regard to its scope and objectives, definitions, and methods” (2005: 2).

The areas of interest addressed as visual culture in writings often focus on unequal societal power structures, mass culture, modernity, and post-modernity but include to a lesser extent also other areas of interest. Visual culture studies is not a coherent project with a single direction but a highly active field of study, one that continues to attract heated debate.
In the meantime, a similar project came into being in the German-speaking countries, termed “Bildwissenschaft” (image science).\(^5\) Here Gottfried Boehm’s (1994a) idea of an “iconic turn” was taken up for discussion of the specificity of images that differentiates them from other modalities.\(^6\) Whereas for a wide array of visual culture studies a political orientation in research was and still is important, *Bildwissenschaft* called for new theories of images, thus orienting research designs. Outlines and elements of *Bildwissenschaft* were published (e.g., Belting, 2001; Sachs-Hombach, 2003; Huber, 2004), as were introductions and readers (e.g., Boehm, 1994b; Schulz, 2005; Sachs-Hombach, 2005a), and debated at various conferences (e.g., Maar and Burda, 2006; Belting, 2007a). And, whereas research in visual culture studies tends to focus especially on images in mass media in the 20th and 21st centuries, studies done under the heading of *Bildwissenschaft* focus on a broad variety of images at different times, including areas such as medicine, forensics, archaeological objects, and 15th-century religious imagery.\(^7\)

*Bildwissenschaft* is, like visual culture studies, a loosely connected discipline. For example, Klaus Sachs-Hombach (2005b) suggests working towards an integrative approach of *Bildwissenschaft* under the auspices of a philosophical theory, but others, such as Martin Schulz, come to conclusions similar to those of Dikovitskaya regarding visual culture:

In conclusion, with all its differences, the old is detected in the new, as well as the new in the old, not less than the other in the self and the other as an unknown self. Not least in this sense, there cannot be a superdiscipline of a *Bildwissenschaft* that would describe the theoretical and methodological frames for all other affiliated disciplines. (Schulz, 2005: 149 – emphasis added, my translation)

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\(^5\) For a discussion of the concept of *Bildwissenschaft* and the difficulty of its translation, see Moxey (2008).

\(^6\) For discussion of Boehm’s and Mitchell’s differences and similarities, see Boehm (2007), Mitchell (2007), Schneider (2008), and Boehm and Mitchell (2009).

\(^7\) *Bildwissenschaft* is worked on by various scholars, but large research projects have been especially important for a constant stream of publications. *Bild-Schrift-Zahl*, at the Helmholtz-Zentrum für Kulturtechnik of Humboldt-Universität Berlin; *Bild, Körper, Medium. Eine anthropologische Perspektive*, at the Hochschule für Gestaltung Karlsruhe; *Eikones. Iconic Criticism*, at the University of Basel; and the *Virtuelles Institut für Bildwissenschaft* project of the University of Magdeburg and the Technical University Chemnitz are examples of research locations with an important influence for *Bildwissenschaft* material published in German.
Bildwissenschaft and visual culture studies have provided examples of successful inter- and transdisciplinary work, manifested in the theories and models created being adopted in the disciplines of origin, as well as by traveling to novel settings. For example, Hans Belting’s and W. J. T. Mitchell’s theories of images are discussed in both respective disciplines of origin, as well as in Bildwissenschaft and visual culture studies, and, additionally, in related disciplines such as cultural anthropology and religious studies.
Pictorial practices: An anthropological approach

Introductions to visual culture studies or Bildwissenschaft tend to omit important social scientific authors working empirically on images, such as Erving Goffman, who has developed an elaborate theory focusing on face as an image of self in interpersonal interaction. The academic background of many authors in visual culture studies and Bildwissenschaft often leads to studies done under these headings lacking empirical methods and influence from known work in social sciences. In these, questions related to images and their uses are explored less with methods such as semi-structured interviews and participant observation.

In order to answer the research questions of 1) how we use digitally networked cameras at a time when they are ever more available and 2) how these cameras mediate our actions, it is important to study these empirically with the aid of social scientific methods.

Work in Bildwissenschaft and visual culture studies is, for empirical work on image use, especially useful for conceptualizing the findings and tying them to other phenomena of interest in visual cultures.

In the relatively recent field of “media anthropology,” this need for intersecting and overlapping has been recognized from early on. Anthropologists Faye Ginsburg, Lila Abu-Lughod, and Brian Larkin (2002: 24) point toward a larger trend in academic work on images and media by stating that

[our work crosses disciplinary boundaries as it intersects, overlaps, and sometimes displaces work not only in other social science disciplines such as sociology, with which we share ancestors, but also in cultural studies, history, literary studies, and cinema and communication studies.

Had they written their introductory text somewhat later, they, presumably, would have included visual culture studies and Bildwissenschaft as well. In 2002, their volume Media Worlds was considered groundbreaking for cultural anthropology, since the majority of anthropologists had tended to shy away from studying picture products related to

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8 This chapter is based on and extends work published by Lehmuskallio (2011b).
consumer capitalism, be they television shows, advertisements, or other media considered “Western.”

A relatively small group of anthropologists had been interested in visual anthropology longer, and in what would later be called by some “media anthropology.” Early anthropological examples of studying picture practices and use of mass media are to be found in Hortense Powdermaker’s (1950) study of the social world of Hollywood cinema production; in the 1970s, in Sol Worth, John Adair, and Richard Chalfen’s (1997) study of Navajo filmmaking; and in Edmund Carpenter’s (1994) study of the effects of mass media in Papua New Guinea. Since then, many anthropologists have conducted media-anthropological studies, but it seems that, similarly to visual culture studies and Bildwissenschaft, the great majority of scholars have needed a global flow of mass-mediated images and technologies in order to see the study of their social uses as an integral part of academic work.

Kelly Askew and Richard Wilk (2002) have published an edited reader, *The Anthropology of Media*, including texts from authors in anthropology but as well from figures known from communication studies. This cooperation has long roots, since, for example, Edmund Carpenter worked with Marshall McLuhan on questions of media and Richard Chalfen was trained by Goffman and helped him gather data for his well-known book *Gender Advertisements* (1979). Therefore, it was a logical step to edit a work on media anthropology, by the same name (Rothenbuhler and Coman, 2005), bringing together articles by media scholars and anthropologists, especially since Eric Rothenbuhler, one of the editors working in communication studies, had already focused on ways of including anthropological theories of “ritual” in research on media (Rothenbuhler, 1998; for a similar research direction, see also Carey, 1989; Couldry, 2003; Sumiala, 2010). Thus media anthropology, or anthropology of media, is a third inter- and transdisciplinary endeavor, which tries to draw from various disciplines in order to understand how media are used in everyday life. Whereas visual culture studies and Bildwissenschaft tend to focus on analyzing media content, technologies, institutions, discourses, and, in some cases, reception, media anthropology focuses largely on the social practices that various media are entangled in.

The added value with this approach is, as Ginsburg, Abu-Lughod, and Larkin (2002: 6) note, that
Through grounded analyses of the practices, cultural worlds, and even fantasies of social actors as they interact with media in a variety of social spaces, we have begun to unbundle assumptions regarding the political economy and social relations shaping media production, circulation, and reception, and the impacts of media technologies themselves.

Empirical ethnographic studies of how people actually use media reveal surprising and sometimes contradictory findings on how to think about the uses of images and media:

Our documentation of local uses and meanings of media and of comparative political economies of media production and consumption (including the constraints posed by the unreliability of electricity and the vicissitudes of poverty) suggests the persistence of difference and the importance of locality while highlighting the forms of inequality that continue to structure our world. Media practices are clearly central to these processes but not necessarily in the ways we might have expected. It is this unpredictability and often vitality of responses that anthropology helps us to understand, allowing us to better grasp how these “restructurings” are taking place. (Ginsburg, Abu-Lughod, and Larkin, 2002: 24–25)

Ginsburg, Abu-Lughod, and Larkin underscore the importance of empirical work for understanding how media actually are used, for grounding theoretical generalizations and providing a possibility to look more closely at the complexities in which media uses are entangled.

Taken together, visual culture studies, Bildwissenschaft, and media anthropology show differing ways of approaching pictures and reveal examples for studying them from different perspectives. They all are part of a larger academic context in which a huge amount of research on vision, visuality, pictures, and images exists, documented in a wide variety of books and journal articles. The studies follow only partially overlapping discourses, with different theoretical emphases, and with different ways of asking and answering questions. The heterogeneity of the research field provides its own challenge, for example, in combining theoretical work from different fields. Crossing of disciplinary boundaries, which is prevalent in studies of visual culture, should be done with an open mind, because only thus are we able to benefit from what we can learn from each other.
This study focuses on non-professional camera picture use by combining theoretical and empirical work mainly informed by the aforementioned discourses, including empirical work published in the recently active field of human–computer interaction. I maintain that the rather theoretical studies published especially in visual culture studies and Bildwissenschaft benefit from empirical case studies focusing on actual uses of camera pictures, whereas empirical undertakings profit from the usually more nuanced discussions of vision, visuality, pictures, images, and the like taking place in the fields of Bildwissenschaft and visual culture studies.

**The body as the first location of images**

Hans Belting, one of the main figures in Bildwissenschaft, provides with his anthropology of images (Belting, 2001, 2011) a theoretically sophisticated model for studying images, which can be drawn from in analysis of empirical uses of cameras in a time when cameras are ever more available. Belting’s model lends itself especially well to the kind of intersecting and cross-disciplinary work suggested by Ginsburg, Abu-Lughod, and Larkin as cited above, because, through his work in Bildwissenschaft, he is firmly rooted in theoretical debates on images while especially acknowledging the importance of anthropological work for developing his own theory of images (see Belting, 2011: 170).

Belting’s theory provides a starting point for this study, with three main strengths that are emphasized and developed with regard to networked cameras and their uses. 1) A first argument of importance for this study that Belting makes involves his practice-oriented understanding of images, in which images are understood as acts in interaction, be it between a person and pictorial media, two persons, or persons via artifacts that serve communicational purposes. 2) A second important argument is that of the integral connection of images to bodies and thus, as I will argue, of techniques and technologies to bodies. 3) The integral connection between images, bodies, and media helps in bridging the distinction made in theories of practice between symbolization processes and material mediations, as I will argue at the end of this chapter.

I will start unpacking Belting’s model for the purpose of this work by focusing first on Belting’s understanding of the image and tying that understanding to recent social scientific discussions stressing the importance of practices in image use (e.g., Bakewell, 1998; Bräunlein, 2004; Rose, 2010).
In work focusing on networked cameras and their non-professional uses, the focus of attention easily remains within the devices used for taking pictures and sharing them around various contexts. But the use of cameras is part of wider human visual culture and tied specifically to the bodies using and creating images in the first place. In relation to this, the question of the image and the ways in which images are created needs a clearer framework. Belting’s (2001, 2005b, 2005c, 2007b) understanding of the look (der Blick) as a carrier of images aids in understanding the relations between bodies, looking devices, and images, and thereby the ways in which we use networked cameras. Belting’s model consists of a triangular interrelationship among the image, the body, and the medium.

An “image” is in Belting’s terminology a symbolic entity that relies on two symbolic acts: first, on the act of perception, in which we create images as part of personal or collective symbolizations, and, second, on the act of fabrication, which we apply in order to create images for others to see. Images are thus both pictures hanging on walls and mental representations, but images come into being only if bodies regard them, turning their attention toward images. Thus the regarding bodies both serve themselves as a medium through which images are regarded and orient themselves towards other media that are used to bring pictures into being in the first place.

This approach differs significantly from models that claim a rigid dualism between “internal” and “external” representation, or “endogenous” and “exogenous” representation, as claimed in, for example, neurobiological research (Belting, 2011: 4). In contrast, Belting underscores the reciprocity between endogenous and exogenous images, which react to each other in a continuous process of interaction. They leave traces and inscriptions in each other and are not to be understood as being met by viewers in a state of tabula rasa. Neither viewers nor producers of, for instance, oil paintings or photographs are able to opt out of this reciprocal relationship:

[Endogenous images, however, react also to exogenous images, which tend to take the ruling part in this cooperation. Images neither exist only on the wall (or on the TV) nor only in our heads. They cannot be extricated from a continuous exercise of interaction, which has left so many traces in the history of artifacts. (Belting, 2005c: 51)]

We create images of our own, in dreams, in memories, and in the ways we perceive the world, and these images are played out again against other images, presented on walls or
television. Private, individual images merge in interaction continuously with publicly displayed ones, and this process of creating publicly directed collective interactions is today the explicit work of public relations professionals and advertising agencies. Exogenous, widely spread images of war, consumption, and leisure are “fodder for those who desire political control” (Belting, 2011: 5).

The “medium” is understood as a “vector, agent, dispositif, […] or support, host, and tool of images” (Belting, 2005c: 51). Images, in this understanding, are themselves not media, as is at times claimed; they need media and use them in order to become visible in the first place, when transmitted to us. Images migrate between different media and so are not bound to any specific carrier, although the media they use, in turn, form the visual appearance of images. In this understanding, anything that can bring images into being can be a medium, be it a mirror, a TV screen, or a specific language spoken.

When one follows the interactional perspective on images outlined above, it becomes clear why also the body regarding images has to be considered as a medium of its own. Belting acknowledges the use of our brains in processing images, as suggested in neurobiological research, but does not consider the experience of images to be tied only to our brains, or our head. Instead, viewing and understanding images is an embodied experience in which the body acts as a medium of its own. The body is understood as a medium that is able to re-present images and separate endogenous from exogenous images because of experience. It has the ability to construct new artificial images that might be regarded by other living bodies, such as oil paintings, drawings, or photographs. And a body knows how to use itself as a medium for exogenous images, as when one wears makeup, masks, clothing, or tattoos or makes gestures. Depending on the social and cultural circumstances, the body might do this image-work in very different ways. The body that I will refer to is a human body, although the German Körper can be used for various other purposes as well.9

The use of “medium” and “media” outlined above is significantly different from the common association of media with mass media, such as newspapers, film, television, and today ever more “the Internet.” So also the mediation of everyday communication

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9 In German, the concept of Körper (body) can be used in referring to bodies of living organisms, also in the plural (e.g., der soziale Körper), but as well to the bodies of images (Bildkörper). The second distinction enables wordplay that allows one to differentiate between that in which an image is shown (Bildkörper) and the medium that brings images into being (the medium understood as the tool of images). Since this differentiation is often difficult to make and maintain, and since it does not add to my analysis, I have not translated it.
understood in this sense, transforming face-to-face relations on account of the specificities of the media involved (Lanzara, 2009), should be distinguished from the conceptions of theories that claim a mediatization of everyday relations, focusing on the impact of broadcast mass media and their institutions on societal processes, such as politics and religion. Somewhat confusingly similar processes involving mass media are referred to also as mediation and mediazation; for a discussion of the concepts, see Couldry (2008).

These different ways of speaking about media make it important to clarify Belting’s (2011: 18) approach: “When I speak of a ‘medium,’ however, I am talking about that which conveys or hosts an image, making it visible, turning it into a picture. Media are time-bound and have histories of their own.” Anything that supports or hosts images is thus a medium, be it a textual description of a scene in a written novel or the latest LCD screen used to visualize digitized information. Belting chooses the term “pictorial media” as shorthand designating the kinds of media associated with creating and showing pictures, such as cameras and canvases. Adopting his use of pictorial media, and expanding on it, I use in this work additionally “material mediation” (Lanzara 2009) in order to refer to the influence of, e.g. pictorial media, on our embodied actions.

But the tension between media and our interactions with images has to be kept in mind: “The image is present in its medium (otherwise we could not see it), and yet it refers to the absence of that entity of which it is a representation. The ‘here and now’ of images coincides with the medium in which they appear to us” (ibid.: 20).

The bodies perceiving and fabricating images are not the masters of images but serve as their location, as a locus and medium of images. We are at the mercy of images that we create, and throughout history we have developed various strategies for dealing with images, whether through spiritual practice or social conventions. This follows from the fact that the body, as a site for images, is not a given stable entity passing unchanged through history. Changes in the ways in which we experience images always reflect changes in body awareness, in the ways in which we understand what our bodies are and what they consist of.

The subject, a “self,” acts at this site for images, in the body, as an embodied subject, as it learns techniques with which to exert some control over the kinds of images it presents and the ones it assigns symbolic meaning to. This control is achieved with the aid of specific patterned ways of interacting with images, which is why people tend to
fear losing their sense of self when coerced to follow novel forms of perception, as has been repeatedly described as happening, for example, with the introduction of cinema. (Belting, 2001: 82, 92)

Belting’s account of the subject in the constellation of bodies, media, and images emphasizes the importance of interaction between internal and external images in becoming a subject in a specific sociohistorical situation. The subject formed hereby is not a consistent, uniform historical subject as claimed in some influential works in visual culture studies (e.g., Crary, 1992) but is collectively anchored and sociodemographically influenced. On the one hand, Belting maintains that exogenous images “tend to take the ruling part in this cooperation” between internal and external images, while, on the other, he asserts that bodies remain difficult to control (Belting, 2001: 32, 74, 82).

From Belting’s perspective, images are exchanged in the act of perception, via a look, between bodies and media:

Images evolve on this side of the medium, in our look. They cannot be located only “there,” on a canvas or in a photo; neither are they located only “here,” in the head of the beholder. The look constitutes the images in the range between “here” and “there” (Belting, 2007b – emphasis in the original, my translation)

The look is the medium used for perceiving images as well as a medium used in orienting the body towards images. The concept is here translated from the German “Blick” and the French “regard,” which differ somewhat in meaning from the English “look” or “gaze.” Belting points out that the “English words “regard” and “regardful” come closer to what is meant here, and this also applies to the words “watch” or ‘watch out” which appear in the linguistic vicinity of the French term “regard”” (Belting, 2005c). Important in this distinction is the type of connection between attention and the movement of the eyes.

Since various writers have drawn a distinction in English between the look and the gaze, referring by the former to interactional looking relations and with the latter to overarching ways of ordering the visual (e.g., Hirsch, 1999; Seppänen, 2006), I will follow this suggestion, although in many cases a clear distinction is difficult to sustain. This difficulty is related to application of a practice-oriented understanding that a structuring gaze is not to be found outside situational looking relations but constructed within them.
The interactional look is connected to seeing, and the sense of sight is often considered the most abstract sense, discursively connected to the ability to understand and know. Although seeing often occurs with the aid of the physiology of the eye, particularly with eye movements helping us to focus on that which seems to be of importance, seeing doesn’t always mean seeing something external to one’s body; what is seen can be a dream, a vision, hallucination, or something difficult to verbalize. Christian prophets and saints saw visions in which transcendent beings appeared, and these were seen with the aid of a look. The seers saw angels and miracles, which were miracles because they differed from the seers’ and their surroundings’ everyday experience. With the help of their visions, prophets directed large communities, as when Moses led the chosen people from Egypt or, in Islam, Mohammed led his followers to Medina. Also in contemporary capitalism we have a discourse on visionaries, equipped with far-sight, who create added value with innovations and thus give direction to the activities of communities.

It is not always clear which part of what we see is actually due to the internal operations of the body, even if we explicitly focus on using our eyes in order to see. The relationship between the image and body is important, because looking as an action cannot happen without a body directing its attention toward an image, incorporating it, and synthesizing a coherent whole that can be animated and analyzed. The look connects the body with an image, and some images are purposefully created in order to attract the look, and thereby bodies’ attention. Following this approach, we see that an image does not exist without a look; it needs the look in order to become an image for a body. In this sense, the look is a medium for images.

Although looking is integral for bodies’ orientation toward images, it always involves various senses and is not reduced to vision. Looking and touching seem to be somewhat intertwined, since, in order for us to see something, to focus our visual attention on it, it has to touch us.\(^\text{10}\) While we are seeing, neither can we stop smelling, tasting, hearing, and feeling: what we see is never purely visual; it is just as well tangible, auditory, gustatory, and olfactory. As Mitchell (2005a) keeps reminding, all media are mixed, and no purely visual media exist. The body perceiving images does so through all of its embodied senses.

\(^{10}\) For theories that link seeing and touching, see, for example, Crary (1992) and Nancy (2010).
This is why the notion of “social aesthetics” (MacDougall, 1999) is useful in pointing towards the aesthetic character of all experience. Here aesthetics is less concerned with beauty or the sublime than it is with the social construction and material mediation of sensory experience that we learn to live with in specific ways.

Although all media are mixed media, some do favor a specific kind of aesthetics, not only because of social conventions but also due to their medium-specificity, because they, for example, are used for transmitting images and showing them on large screens, thus appealing to the sense of sight. The question of medium-specific affordances (Gibson, 1988) is explored in more depth in the section on agency and affordances.

Belting’s model, if understood interactionally and not as a universal anthropology with one essential body as, among others, Bachmann-Medick (2006: 341) suggests (see also Belting, 2007b: 49), is highly dynamic and opposes a rigid dualism between internal and external representations. Any changes in images, bodies, or media affect the other concepts in the interrelationship; thus his model is in itself process-related and can be used to study individuals and how we make sense of the world around us.

In following Belting, I draw from his open and associative understanding of images as symbolic entities that are formed in the interaction between the one who sees and that looked at. Thus a human body can be understood as a medium for images, which both generates images internally and forms the body externally with clothing, makeup, tattoos, masks, and gestures. The images created externally are communicative means that will be looked at in different ways. Depending on the ways in which bodies use images, responses in interactions can be sought. Here, looking relations, the glance, look, and gaze are paramount for understanding where and for what images are made. The body serves equally well as a medium for internal images, in which memories, imagination, dreams, and hallucinations are visualized.

With this understanding, images are studied as part of acts that rely on symbolization techniques. Liza Bakewell has termed these symbolic expressions image acts. (Human-made) “[i]mages, rather than re-present reality and therefore be largely descriptive, are more accurately categorized as actions” (Bakewell, 1998: 22). Images are created and used for specific purposes, and often they make sense only once

11 Peter Bräunlein (2004) suggests explicitly focusing on Belting, Langer, and Bakewell when studying actions and practices with and around pictures. Susanne Langer (1979) has made a distinction between presentational and discursive forms, arguing that pictorial representations are symbolic expressions, just as language is, but of a different kind than language.
contextualized. From this understanding, images can be studied as acts in interactions, which are transmitted in the interplay between media carrying images and bodies directing their attention in perceiving them. The interplay is enabled via a look, which is simultaneously the carrier of all of our visual knowledge (Belting, 2007b).

Belting's own use of “pictorial media” for media that are used for showing and using images shows the need to constrain the relatively open triad of image, body, and medium for the purposes of study. So there is a tension to be kept in mind when, for analytical purposes in studying the use of cameras and pictures taken with them, I talk about “pictures” and “pictorial media” when referring to material artifacts that show images. This move, made in awareness of the tension, is at times recommended by Mitchell, and also Seppänen (2001: 168, 2006) suggests that the “pictorial” refers to that which manifests itself in a supporting medium as an image that is different from the supporting medium itself.

Thus the “pictorial practices” of interest for this study are those focusing especially on the uses of cameras at a time when they are ever more available. In focusing on the uses of photographs and video clips that can be captured and shared with the aid of networked camera devices and interoperable software, Belting’s perspective reminds us of the need to understand image use not bound to one specific pictorial medium, such as photography. The use of cameras is, rather, part of wider human visual relations, tied specifically to our embodied forms of interaction with each other.
Pictorial practices

Visual orders and the gaze

Pictorial interaction is inherently social and, as suggested, by no means limited to dealing only with photos or oil paintings (Rammert, 2005). There are significant differences in how people look through time and space, in how they appear themselves, and in what they look at. For us to find these differences, it is important to focus on “how people organize their thinking to understand looking or being looked at” (Chalfen, 2009a).

By being enculturated into various interactional situations, we learn specific looking relations that seem to be natural to us. In Germany, when, for example, a man greets a woman, it is common to look her in the eyes, and it is considered inappropriate in a greeting ritual to escape looking into each other’s eyes. Or in Syria, when a man visits some rather pious Muslims, it is usual not to see any of the females of the house, although they usually prepare the food and might offer a welcome via their male relatives while remaining bodily invisible. In the first example, the mutual look in each other's eyes has agency in the greeting ritual, being part of the presentation of self as a moral and trustable character (Goffman, 2005). In the second example, the mutual look in each other’s eyes is seen as having immoral agency, being a threat to social cohesion.

In Finland, in turn, people avoid long and frequent eye contact with strangers and at times turn the head away when encountering strangers while walking down the street. A look directly into the eyes can be experienced as intrusive; by looking, the beholder might get too close to one’s body. By looking into the eyes of another person, one may be able to get her to respond to the look, and by responding to the look she might offer her own challenge, suggesting something that the other is not willing or ready to do. From this perspective, a look that remains on someone else’s eyes for that extra moment could be dangerous, because it is not organized in a customary framework. But it includes as well a possibility, such as of an exciting and surprising meeting that arouses one’s interest positively. A long look opens the door for a wide array of interactions and helps to build a connection between bodies.

The dangerousness of a look can be explained by our social organization of interaction: our behavior regulated by looks is ordered and symbolically rich. Not following interactional orders, by looking differently (or by looking strangers in the eye
too long), questions the interactional order and its foundation. When we create on our bodies images for others to see, we do it emphatically and interactionally. The exchange of looks, our way of communicating with the look, is based on our ability to create images of our selves.

“Look” (der Blick) (Belting, 2007b), “visual order” (e.g., Seppänen, 2006), “gaze” (e.g., Foucault, 1991, 2002), “scopic regime” (e.g., Jay, 1988), and “visuality” (Foster, 1988; Mirzoeff, 2006) are key terms in the ever expanding field of studies focusing on visual aspects, underscoring that pictorial interactions are not random but organized. These concepts are all used in focusing on the constructed structures of the visual, maintaining that there are patterns in what we see, “how we see, how we are able, allowed, or made to see, and how we see this seeing or the unseen therein” (Foster, 1988: ix). The terms emphasize that seeing in itself, instead of being purely a physical device-like process working as a camera obscura does, is heavily culturally constructed, negotiated, patterned, and every now and then contested. At the same time, visual orders can be thought of as social mediators that we have to deal with but that, as mediators, are moldable, redefinable, and exchangeable - though always at certain costs.

That of the “gaze” is perhaps the most common concept used in visual culture studies and Bildwissenschaft to describe looking relations as organized and also to describe how this organization is done in particular cases. Although the concept has various, somewhat distinct, sets of theoretical roots (e.g., Foucault, 1991; Lacan, 1998), the gaze can be understood as a carrier of visual knowledge and an ordering device in the microstructure of social interactions. Instead of being a passive endeavor, the gaze is actively constructed within pictorial interactions:

Practicing the gaze does not merely amount to reception but serves the purpose of ordering (ordonner) the visible. The image draws its meaning from the gaze, much as the text lives from reading. (Debray, translated in Belting, 2005c: 50)

The gaze establishes the social field of image practices, giving orientation and order to the ways in which we regard and are regarded.

Various structuring gazes have been identified for specific activities, which all extend singular activities and organize interactions. Examples are a “tourist gaze” ordering tourist behavior (Urry, 2002); a “familial gaze” ordering the ways in which “family” is lived out (Hirsch, 1997, 1999); a “male gaze” separating men and women
and treating them differently, referring originally to the male as an active scopophilic spectator and the woman as a passive model to be looked at (Mulvey, 1975; Berger, 1982); and an “orientalist gaze” for the ways in which many people in the “West” look at the geopolitical area termed “the Orient” (e.g., Lewis, 2004; Said, 1995).

The gaze is thus a metaphor used to point toward the orders of the visual, the ways in which we look as well as the ways in which what we look at is organized. Visual orders are in this study understood as the specific regularities and structures of the visually perceivable and the associations or meanings that are attached to them, as outlined by Seppänen (2006: 3, 28–29, 81). Visual orders are found in pictorial representations, nonverbal communication, and the culturally molded environment – in various artifacts that are part of human interaction. The concepts of gaze and visual order, used in this study interchangeably, aid in the classification of various kinds of image uses but just as well in seeing the classificatory work in which images are positioned in the first place.

For example, findings from science and technology studies support this perspective, showing that images are less illustrations of hard facts than explicitly an integral part of creating knowledge, or “hard facts,” in the first place:

Once science ceased to be regarded as a body of propositions, it quickly became apparent that images and other forms of visualization played an important, often organizing role in laboratory work. They mediate both social and instrumental interactions. (Amsterdamska, 2008: 28; see also Burri and Dumit, 2008)

In focusing on structures of the visual, we may note that this image-work is done in other societal areas as well: images mediate and are used to structure interaction. We learn the uses of images in interactions, using them to order the ways in which we look and make our selves seen. We live with and understand the world in images (Belting, 2001: 11).

“Culture” and the visual\footnote{This section and the beginning of the next is based on and extends Lehmuskallio 2008b.}

The notion of a visual order, of patterned ways of interacting with pictures, raises the question of specific cultures of vision, or cultures of the visual. How should we understand “culture” in this constellation?
Whereas the visual, in its role in theory and everyday life, has received increasing attention in studies of visual culture, the concept “culture” in the same discussions has remained surprisingly vague. In introductions to the emerging fields of visual culture and Bildwissenschaft and discussions of them, it has been emphasized that it is important to break out of the constraints of Arnoldian high culture, but in many studies the concept of culture is still associated with people living in close proximity to one another and sharing a “whole way of life.” “Western culture” is an especially frequent trope, used to differentiate one set of images and picture uses from “non-Western” ways of using pictures, implying a border between “the West and the Rest.” This implied border connotes that culture would be itself inscribed into images and media (e.g., Heywood, 1999; Howells, 2003; Rampley, 2005). On the other hand, many studies in visual culture have shown that images call for their own practices and that images travel, from medium to medium and locality to locality, thus in a way gaining “lives of their own” (Mitchell, 2005b).

In elaborating upon the idea of “pictorial practices,” focusing on the specific ways in which pictures are used, I would like to suggest that following a practice-related approach to culture connects cultures not to one particular location but, instead, to a logic of self-organization. In reflection on culture, this shifts the focus from ideas to embodied, materially mediated arrays of specific practices (Schatzki, 2001) that are, at least partially, translocal. Translocality means in this context a filtered (re-)embedding of deterritorialized practices (Reuter, 2004). Translocal practices are not “the same” in different locales but have enough traits in common that a person coming from a specific context might orient him- or herself in it thereby;Augé’s (1994) non-places – airports, trains, and highways – are a good example of such locales for translocal practices. For example, learning to orient oneself in one kind of airport is useful when one is later at another, possibly thousands of kilometers away.

The intention behind the move toward practices is not to give another definition of culture per se but, rather, to orient questions regarding the cultural to specific practices that are empirically analyzable in interactions with bodies, media, and images that flow,

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14 For instance, Rampley speaks of contemporary Western society, although stating that cultures are dynamic. Viktoria Schmidt-Linsenhoff has discussed this issue in relation to the postcolonial turn and critical art history (2002).
15 Irit Rogoff (2002) here draws a distinction between a culture of singularity and a culture of specificity.
albeit disjunctively (cf. Appadurai, 2000). As will be shown in the case studies, these practices take an empirically special form. And when pictures are an integral constituent of specific practices, we can speak of “pictorial practices” that entail their own associations, embodied actions, and material mediations (cf. Mersmann and Schulz, 2006). These pictorial practices travel from one place to another and are not bound to those living in close proximity to one another.

Pictorial practices have a dual character (Hörning and Reuter, 2004). On the one hand, they constitute a set of routine interaction patterns, a shared doing that is considered to be normal. This focus on practices might show how deep-seated specific normalized, hegemonic practices are. On the other hand, in situational practices individuals might also manage to use their ultimately indeterminate character for their own purposes. This implies not only a tolerance for other kinds of practices, lived out in different locales; it also raises the question of how we actually deal in our lives with other ways of doing.16

Individuals differ in their experience of the world and the practices they have learned or have access to, thus living in distinct worlds. Following Fredrik Barth (1994: 357–358), “all views are singular and positioned” and no one can give a definite account of “culture.” Individual learning of practices is a never-ending process of social adaptation guided by the desire to construct mutually compatible associations with, for example, the speech-sounds that one hears and constructs (von Glasersfeld, 1997). Interactions are organized in social settings around shared practical understandings and accordingly have organizational and communicational value. From this perspective, the focus in analysis changes from culture-as-being to culture-as-process, of practices used to order our interactions in the world. The ordering is done with “embodied capacities such as know-how, skills, tacit understanding, and dispositions” (Schatzki, 2001: 7). As we live practices out, power relations and social disparities come to the fore. They are not only contested and different between individuals or specific groups of people but also

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16 Appadurai writes that “there is a growing disjuncture between the globalization of knowledge and the knowledge of globalization. […] [G]lobalization as an uneven economic process creates a fragmented and uneven distribution of just those resources for learning, teaching, and cultural criticism that are most vital for the formation of democratic research communities that could produce a global view of globalization. That is, globalization resists the possibility of just those forms of collaboration that might make it easier to understand or criticise” (2000: 4).
heterogeneous, uncoordinated, and possibly incommensurable during the lifetime of any individual.  

Already one shared practice suffices for mutual interaction. An Afghan man who joined his family in Finland provides a good example. Although he had never been outside Afghanistan before, he was shortly after his arrival already playing chess with the Finnish husband of one of my colleagues without sharing a common socializing practice apart from chess. They shared a similar cultural technique and were able to engage in a shared practice.

Pictures call for their own cultural practices. They are made by means of specific techniques in order to fit explicit formats, and pictures have their places, where they are placed, kept, collected, and looked at. These practices involve embodied subjects that have developed techniques of the body (Mauss, 1973) that make sense only with and in front of images – elsewhere these techniques would, as Schulz and Mersmann (2006: 13) point out, be deemed deviant behavior. Examples include sitting in front of a silver screen while waiting for a movie to begin and gathering around a photo album to look at the pictures from last year’s vacation.

The pictorial practices in networked camera use are of special interest for this study. How do we use digitally networked cameras in this time of them growing ever more available? Are the uses empirically patterned such that we can talk about specific pictorial practices? And are practices similar across locales?

The idea of translocality of pictorial practices is based on the presumption that we are living in a globalized world in which commodities, people, technologies, ideas, and money move from specific places to others – even though there is discordance in when this process started. Following Marc Augé (1994), I presume that our “here and now,” especially in cities, differs from others’ on the basis of the overabundance of events, spatial overabundance, and the individualization of references. For example, empirical work on the individualization of references shows that it occurs alongside ever more ways of connecting to various people. The notion of “individualized networks” is used in social network analysis to refer to what Augé calls an individualization of references (Wellman, 2007; Kennedy and Wellman, 2007). Here means of communication, such as

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17 Andreas Reckwitz shows that practice theories do not form a coherent framework for understanding societal action but differ especially in the kinds of agency ascribed to individuals, social structures, and material mediations. What they do have in common is a focus on “culture-as-process,” and the importance of doing (Reckwitz, 2003, 2002).
cellular phones, e-mail addresses, photo-sharing sites, social networking sites, or Web-based sharing applications, are used individually, helping in maintaining and developing personal networks.

This individualization of references does not mean that traditional social relationships would not matter. It refers rather more to the importance of the changes in how individuals connect to other people, as well as the changes in the ways in which they create new social relations. The techniques for being an individual today differ from those two hundred years ago.

It follows that assuming that people living spatially close to each other also share a “whole way of life” has become somewhat problematic. People share some practices with each other but differ in a wide array of others, depending on age, income, gender, ethnicity, religiosity, political views, class, and identification with specific imagined and actually experienced communities.

The everyday information we focus our attention on is also anything but homogenous. Because of advances in information and communication technologies and changes in the socioeconomic organization of our lives, everyday communication is becoming ever more mediated. This implies a transformation in living out social relations, since an affiliation with specific groups has to be at the same time attributed and imagined (Thompson, 1995; Appadurai, 1996; Grodin and Lindlof, 1996).

From a practice-theoretical perspective, in study of camera picture use in a globalized surmodernity, the problem with the noun “culture” is that it is easily associated with a sort of internalized substance of a predefined group of people, a set of shared ideas, beliefs, and abstractly specified rules or norms that govern people, allegedly making their behavior and thinking predictable. Therefore, the word is often used, as Abu-Lughod (1991, 1997) notes, in order to construct similarities and differences, dualism between “us” and “them,” serving as a central component for distancing and othering. A raft of writers have tried to show how using the concept of culture to designate socially coherent groups sharing whole ways of life actually tends to homogenize very heterogeneous people and creates problematic naturalized boundaries (see, for example, Abu-Lughod, 1991; Goody, 1994; Said, 1995). Culture has been an explanatory principle that does not hold up to contemporary empirical observations. This is why some authors have gone so far as to suggest dismissing the noun “culture,” either by shifting focus to its adjectival form “cultural” (Borofsky, 1994; Barnard and
Spencer, 1996; Appadurai, 1996) or by refocusing attention on, for example, configurations of power, education, and wealth (Brumann et al., 1999) or on events, acts, people, and processes (Barth, 1994).18

In turning attention to how we in some instances actually behave in similar ways to people living far away from us, and very differently from those close to us, I wish to problematize some of these naturalized boundaries created in talking about culture-as-being. From the angle of pictorial practices, of culture-as-process, I try to account for the translocal character of many of our everyday practices.

From this perspective on translocal pictorial practices, cultural dissemination “does not require physical proximity or a specific type of gemeinschaft ties, only social interaction, however (mass-) mediated and casual this may be – just seeing, hearing, or reading of one another may suffice for mutual imitation” (Brumann et al., 1999: S23). Many translocally shared practices are nevertheless everyday behavior to which we don’t assign much meaning: taking the bus, sitting on a chair, watching a movie, walking down the street, or taking snapshot photographs. This behavior, as it takes the form of practices, is repeated, habitual action, that we do not pay too much attention to in our everyday life.

18 For a good overview of these debates, with further references, see the work of Brumann et al. (1999) and for a more general overview of “culture” and its history Michael M. J. Fischer (2007).
The role of mediation in pictorial practices

Related research has noted the translocality of some pictorial practices. With the increasing movement of commodities, people, technologies, ideas, and money, specific cultural elements and entire pictorial practices have become dislocated and can be found dispersed in surprising places. Francisco Osorio (2005: 43–44) discusses this phenomenon in reflection on the uses of television:

[I]n every [society] […] in which television is present, people most often use the television set to watch television. This may seem obvious, but it is not. No society worships the television set. No society builds a ceremonial place for the television set inside or outside of the house […] or …] uses the television set to build fences, for example.

Similarly to Osorio, Richard Chalfen has noticed peculiar similarities in the ways in which people use film cameras to take private snapshot photographs, and my empirical findings presented later contribute to this understanding. Not only are the occasions for taking snapshot photographs similar between families in the U.S. and Finland, which live far away from each other, but so are who is pictured and how these people are pictured. Chalfen, having identified a shared pictorial practice for snapshot photography, which he terms “Kodak culture” after the most successful manufacturer of point-and-shoot cameras, had to posit the research question at the end of his study:

If we find that similarities outnumber trivial differences for all groups studied, we should be prepared to take the construct of Kodak culture even further. Speculation and consideration must be given to the fact that inexpensive camera equipment, produced for non-professional use in contexts of home-mode communication, carries with it some form of “operating instructions” – instructions that somehow provide a model for appropriate behavior on a cross-cultural basis. (Chalfen, 1987: 163–164)

Pictorial media, in this understanding, partake in structuring ways of looking, practices of looking (cf. Sturken and Cartwright, 2001) but, from my perspective, always in relation to bodies and images. The material mediation of pictorial practices, such as of watching television, does not determine embodied actions, nor symbolization processes – but it surely seems to have an effect on them.
The question of the role of pictorial media in structuring interactions is of special relevance in studying non-professional camera use, since cameras are embedded in ever more devices, of ever more types, that can be used to transmit pictures taken, translocally. Laptop webcams, mobile camera-phones, and digital point-and-shoot cameras provide salient examples of cameras connected to digital networks that can be used to share and display images almost instantly after capture, far from the location where the images originally were captured.

Additionally, the role of pictorial media in pictorial practices is relevant since, especially lately, discussions of practices have shown increasing interest in exploring the ways in which things mediate our actions, having some sort of agency (e.g., Latour, 1993; Miller, 1994; Gell, 1998; Star, 1999; Dant, 2004; Henare, Holbraad, and Wastell, 2007; Rammert, 2008). The discussion of material mediations – which in my case focuses on the roles of pictorial media – has not led to agreement on the agency that things have, and even those accepting some sort of agency dispute its quality and amount. Empirical studies of non-professional camera use again tend to neglect studies focusing on material mediations, although photography, especially today, is a heavily mediated activity. For example, a person taking pictures with a mobile camera-phone has to understand how to use the device itself and how to transmit the pictures taken to other media that can be used to share and display the pictures taken.

A broad cross-section of studies of the uses of photographs tends to focus on the socially constructed side, the symbolic uses images are put to. This perspective is important, but

a dialectical concept of visual culture cannot rest content with a definition of its object as the social construction of the visual field, but must insist on exploring the chiastic reversal of this proposition, *the visual construction of the social field*. It is not just that we see the way we do because we are social animals, but also that our social arrangements take the forms they do because we are seeing animals.

(Mitchell, 2002: 171 – emphasis in the original)

This approach calls for taking into account symbolic ideas and embodied actions, but also the varying agencies of things in interactions. Pictorial media that bring images into being are formed in ways that support specific kinds of social aesthetics and constrain others. They act as a nexus of interactions, mediating the ways in which social actors
relate to each other. Here "'objects' merge with 'people' by virtue of the existence of social relations between persons and things, and persons and persons via things" (Gell, 1998: 12). And the ways in which these things are constructed and made available matter.

The size of a photographic camera, its ease of use, the various networks it is connected to, and simply its price or availability all affect the ways cameras are actually used, and thus the forms that our everyday "camera lives" take.

Compared to those of today, photographic cameras in the mid-19th century were heavy devices whose use necessitated special knowledge, and often the pictures taken had to be developed on the spot, so that they would not fade away because of technical constraints. The pictorial practices of the 19th century were significantly formed around specific techniques, and the know-how needed for taking photographic pictures was very different from operation of today’s digital point-and-shoot cameras: the latter can be carried easily for hours, do not need instant developing after exposure, and in some cases can be used successfully even by three-year-old toddlers, as will be shown in the empirical case study of mobile camera-phones in the social fabric of a kindergarten.

A change in the things used for “doing photography” is not only a material question, a matter of cameras, chemicals, or the money available, but inextricably linked to novel embodied practices, to changed ways of relating bodily to photographic equipment (Dant, 2007). Comparing the mid-19th century photographer to a modern snaphooter again, we find that the embodied practices needed for taking pictures are very different. In the 19th century, a photographer was much longer and more tightly integrated with his devices in the act of taking and developing a photograph, whereas today a snapshot may be taken and “developed” within seconds, through bodily gestures that would have been completely useless a century ago.

This transformation in the relationship formed between the body and photographic technology reshapes the relations of bodies and artifacts, changing that which explicitly has to be taken care of by a human being. A photographer using a mobile camera-phone for taking a picture and sending this to a colleague’s phone is in a relationship to the device’s operating system, its wireless connections, and data transmission costs but does not see them while performing the act of taking a picture and sending it onward. In most cases, the photographer neither understands how the operating system actually works nor knows how the device connects wirelessly, whereas her equivalent involved in a
similar task in the mid-19th century was far more versed in the various technical aspects of taking pictures, developing them, and showing the results to colleagues.

Today cameras can be digitally networked and, for example, part of multi-camera surveillance systems in shopping malls; used in webcam-based technology installed at kindergartens; and embedded in networked mobile camera-phones carried by people almost constantly as they engage in elements of daily life such as work, political demonstrations, and leisure activities. The exact constitution of each camera technology acts as a specific kind of nexus, mediating social relations in particular ways, and is often built in the first place to orient social relations in particular directions. The visible multi-camera surveillance system in a shopping mall is installed in order to enable those accessing its pictures to surveil, to observe, what others within its range are doing, as well as to sanction the actions of those within its range. The webcam-based technology in a kindergarten is built so that children’s parents and possibly third parties have visual access to everyday life in kindergarten, enabling them to connect with the children while at work by using networked camera technology. And mobile camera-phones are built in ways that enable everyone with a camera to participate in the representational sphere, enabling representation of the seen, its reproduction, and transmission to selected recipients.

The visual construction of the social field, the importance of mediations, and the ways in which “objects merge with people” have only recently been recognized in studies of visual culture, and hardly any empirical study has examined these yet. Most studies of snapshot photography, for example, tend to highlight the social signification practices in doing photography but do not focus on the importance of the infrastructure (Star and Ruhleder, 1996; Star, 1999) for actually doing so (e.g., Chalfen, 1987; Rose, 2010). For the “film era,” this social constructivist approach seems naturally fitting for snapshot photography, since the basic constituents of snapshot photography – the easy-to-use camera, film, developing services, and prints – had been a dominant design since the early 20th century and did not seem to call for explication (Sarvas and Frohlich, 2011: 54–92). But with the digitalization of cameras, they are changing as “things” (Latour, 1993, 2005a). Mobile phone manufacturers, search engine companies, and social networking site providers become important stakeholders for photography, with Nokia, Apple, Google, Facebook, and Flickr serving as salient examples. Here the infrastructure for networked cameras changes the dominant design to a significant...
extent, and thus the ways in which cameras mediate social relations “between persons and things, and persons and persons via things.”

*Images in corpore and in effigy*

The anthropology of images, serving as a backdrop for this study, draws attention to the importance of the body as the location of images. Pictorial media make sense only in relation to a body that interacts with them, using symbolic acts for doing so.

For Belting, images need media in order to be perceivable, but these media also regulate the ways in which images can be seen. For example, the screen of a mobile camera-phone used to show a picture taken of another person has a specific resolution, a specific size, and certain contrast settings that present the person differently than in seeing her face to face. We have learned to use this kind of medium, and we are able to perceive the images presented such that we do not confound them with living bodies or with plain things to be used. (Belting, 2001: 13)

Belting’s understanding of medium as a “vector, agent, dispositif, […] or support, host, and tool of images” is useful for emphasizing the importance of mediation in image use. His embodied grounding of studying images focuses explicitly on the importance of specific media in organizing how we see, live, and understand our selves and our relations to others. This understanding of media is useful because of its breadth and its relativity to a given context, since this makes it possible to apply it in studying various settings in which images come to the fore. This approach is therefore *not* limited to studies of mass media (e.g., film, television, or magazine photos) or pictorial media familiar from the art context (such as oil paintings and photographs) and can be used as well in studying, for example, image use in religious cults or, as in this study, as part of non-professional camera use.

An especially useful differentiation for studying image use as part of social relations in camera use is between images “in corpore,” which constitute a somatic entity with bodies showing them, and images “in effigy,” which dissolve the somatic entity by changing the body as medium into an artificial supporting medium, one that I at times term “picture” for analytical purposes (ibid.: 34).

The difference between the image to be perceived in images *in corpore* and images in *effigy* is a difference in the location of the medium used for showing images for others to see. Images *in corpore*, such as masks, gestures, clothing, and makeup, need the
medium of the body if they are to become images to be shown at all. They are inseparable from the bodies on which they are created. The body and the image in corpore provide a nexus of interaction with others. Images in effigy, such as statues, panels, wax figures, and photographs, are created on an artificial supporting medium. Bodies, which perceive both kinds of images, have enough lived experience that they can differentiate between these two kinds of images, as well as both kinds of supporting media.

Belting presents his distinction between images in corpore and images in effigy when discussing masks, which are images that need a specific kind of social interaction in order to be activated. In particular, this discussion of the use of masks echoes Erving Goffman's work, which is important for a range of social scientific studies of photo use (Chalfen, 1987; Musello, 1979; Ulkuniemi, 2005; Siibak, 2009). For Belting, an authentic face is not one that a mask conceals; instead, the mask, as an image in corpore, is integral to becoming a person. The Latin persona is a prime example with its double meaning of mask and role, which are necessary for any body to become a person, a subject, to begin with (Belting, 2001: 135; Goffman, 1990).

In his work, Goffman focuses – fittingly, with the help of theater metaphors – on presentations of self, studying especially how bodies present self in different situations and why they do so. Instead of being interested in the informative dimension of communication, he focuses explicitly on the ritual side of interaction, on the ways in which communities and communality are created within interaction. From Belting’s image anthropological approach, Goffman can be understood as a media theorist with a finely honed understanding of the ways in which we use our bodies as media in interaction.

Goffman uses “face” as his main concept, around which he explains the communicative rituals in reciprocal interaction. Importantly, face is for Goffman (2005: 5) “an image of self delineated in terms of approved social attributes” (emphasis added). With face-work, the work needed to create situationally proper face, we create images of situationally positive social values, such as honesty, trustworthiness, and friendliness. With the aid of face, created as an image on one’s body serving as medium, we seek to orient interaction to a specific direction. By performing in accordance with accepted social attributes and re-presenting them in mutual interaction, we actively create moral sociality. Proper face serves as an index for mutual solidarity.
Goffman’s theory of face rests on Durkheim’s (2008) understanding of the sacred. According to Durkheim, the social reality of communities is constructed substantially around sacred things, which are special and handled via prohibitions. Durkheim believed that communities stay together by fostering the special and prohibited sacred with the aid of rites and beliefs. The sacred is for Durkheim a universal phenomenon: without a common sacred, communal life does not exist.

Maintaining face is, in Goffman’s understanding, sacred, which we guarantee with the help of a wide array of interaction rituals. Interaction rituals uphold common morals and, thereby, shared ways of situationally presenting face. Face is a sacred part of interaction that creates a temporary bond among those who interact, with elaborate interaction rituals advising in how to deal with things treated as sacred. From a social perspective, this kind of “ritual is a mechanism of mutually focused emotion and attention producing a momentarily shared reality, which thereby generates solidarity and symbols of group membership” (Collins, 2004:7). By challenging particular ways of presenting face, we challenge the moral foundation of interaction rituals, and this is done in visible ways. When we look at someone for too long or when we do not look at her at all, we violate situational interaction rituals, situational visual orders.

Randall Collins (2004), who builds explicitly on the work of Goffman and Durkheim in his Interaction Ritual Chains, argues that humans try to find a mid-term balance of maximal emotional energy in interaction rituals. The word “ritual” in this sense should not be confused with the common idea of rituals as spatiotemporally separate phases in society, such as a carnival or initiation rituals. Instead, it should be understood as a special form of social interaction, whether secular or not. A common example of interaction rituals is the various ways of greeting each other, which open communicative spaces and serve the function of constructing momentary shared realities. Greetings are poor in their information content but rich in creating and maintaining social cohesion (ibid.: 15).

When we externalize these images in corpore, the particular ways of presenting face in social interaction, as images in effigy, the images differ from each other in consequence of the media used to make them visible. Maintaining face in face-to-face interaction calls for a different set of actions in interaction than does doing so on photo-sharing sites, where communicational acts are differently constrained. Images in effigy
are always mediated differently than images in corpore, since the "support, host, and tool of images" differs.

The interrelation between images in corpore and images in effigy is especially important for understanding similarities in social uses of images. The focus on pictorial media, the ways in which we transmit images and in which images are transmitted to us, places stress on medium-specific differences.

Techniques of the body

In addressing medium-specific differences between images in corpore and images in effigy, which requires stress on the importance of the body in creating images in the first place, I will turn to the question of techniques and discuss how they are used in order to create images in effigy. An embodied understanding of technique will help us understand what kind of “things” cameras have become, aiding in understanding the relations assumed by bodies and cameras in a “cam era.”

Social scientific practice theories focusing on material mediations propose, as I do, that the ways in which action is mediated matter. The things through which we act have a kind of agency of their own, although the scope of this agency is contested.

One deficiency extending across many of these studies is that they do not ask what techniques are, while using the concepts of “technique” and the related “technology” as general formulae to designate all kinds of things, usually things that are different from human beings (e.g., Bloomfield, Latham and Vurdubakis, 2010). Mobile phones, electrical cords, and computers are described as technology, but they could just as well be called devices, objects, or instruments. The relationship between technology and techniques, and therefore that between bodies and things, remains unclear.

From my perspective, drawing from an anthropology of images, the things used as media for specific actions have an anthropological dimension that ties them to the human body. On the one hand, things used as media for images exteriorize human functions and organs, extending the agency of the body into things. On the other hand, they direct sensory information into the body, molding the body, and thus become part of it. This view is shared by a group of writers dealing with our material connections, among them Marcel Mauss (1973), Marshall McLuhan (1994), André Leroi-Gourhan (1984), James Jerome Gibson (1988), and Alfred Gell (1998).
The connection between things and bodies, and their mutual molding interrelation, is of special importance in leading toward an answer as to the ways in which cameras mediate embodied action. Mauss (1973: 75), in his lecture on techniques of the body, highlights the essential relation between bodies and things used as media:

I made, and went on making for several years, the fundamental mistake of thinking that there is technique only when there is an instrument. I had to go back to ancient notions, to the Platonic position on technique, for Plato spoke of a technique of music and in particular of a technique of the dance, and extend these notions.

Mauss’s point about technique is relevant for our discussion, since he emphasizes the fundamental connection between body and technique. Underscoring this connection goes explicitly against the grain of common thought on “new media,” which tends to forget that even the newest and most immersive digital instruments are used by bodies for specific purposes. An embodied understanding of technique can be employed for showing continuities, similarities, and resonances between uses of bodies and artifacts, showing how, for example, experiences of disembodiment described for digital environments are actually experiences of the body, ones that have their historical parallels (cf. Belting, 2001).

The etymology of “technique” can be traced to the Greek tekhné, tekhnikós, and tekton and to the Latin texere. Here the verbs for interweaving, connecting, and assembling meet adjectival concepts such as that of the competent and expert, as well as the nouns for a carpenter and builder. The Greek tekhné and the Latin ars became two general terms for designating all kinds of skills and were later separated into applied and fine arts, a distinction still retained by many. (Rammert, 1999, “technic,” 1996)

Of the various definitions of technique, Mauss’s version is the most elegant, thanks to its brevity and accuracy. He defines technique as “an action which is effective and traditional” (Mauss, 1973: 75 – emphasis in the original). With this understanding of technique, an action is effective if it brings a change in the state of affairs in comparison to the state before application of the technique. It is traditional if it can be applied repetitively: a single action becomes a repeated practice. These kinds of repetitive, “traditional” actions form practices, which are a cornerstone of our everyday interactions. Important to this understanding of technique is its integral connection to the body.
For application of a technique, the body is our “first instrument,” “technical object,” and “technical means.” “Before instrumental technique there is the ensemble of techniques of the body,” says Mauss (ibid.: 76). This view is shared by Belting’s anthropology of the image, in which a clear-cut separation between bodies and technical instruments is eschewed in favor of a practice-based understanding. The symbolic techniques applied in image use are, first and foremost, techniques of the body (Belting, 2001: 50). Leroi-Gourhan, Mauss’s student, who has systematized steps from embodied actions to use of various tools for achieving intended results, clarifies this connection between body, tool, and technical action:

The concept “tool” itself needs to be reviewed with reference to the animal world, for technical action is found in invertebrates as much as in human beings and should not be limited exclusively to the artifacts that are our privilege. In animals, tool and gesture merge into a single organ with the motor part and the active part forming an undivided whole. (Leroi-Gourhan, 1993: 237 – emphasis added)

The gesture is, in this understanding, an indispensable part of any artifact, because only the combination of gesture and artifact makes the artifact “technically effective” (see also Dant, 2007). Various forms of gestures, such as grasping, hammering, sectioning, and digging, are basic forms of interaction and are performed manually (with fingers, fingernails, and the palm) as well as orally (with teeth, tongue, and lips). Simple tools such as axes, hammers, clubs, and knives extend the technical operations of the body, helping to exteriorize some of our embodied actions partially to artifacts. Important for the development of human pictorial practices are the kinds of gestures related to vision and visuality, which at times have been exteriorized, or made possible, with the aid of material artifacts.

In this understanding, techniques, being effective and traditional action, have the body as their first location. The use of specific techniques affects the body itself. The media we use for doing things transform us and the kinds of relations we are able to have (Belting, 2001: 13). Here Mauss (1973: 81) cites the example of squatting, a technique of the body we can perform when a child while many adults in the “Western world” have severe difficulties in it. As we grow up as “sitting mankind,” with benches and chairs, our physical abilities change and specific muscles weaken or cannot bend as well as when we had to rely on other positions. It is no wonder then that the things we use for
performing our techniques of the body have this transformative effect, as, for example, shoes have for walking. Mauss observes that “the fact that we wear shoes for walking transforms the positions of our feet: we feel it sure enough when we walk without them” (ibid.: 74). The same seems to apply to the use of cameras: stopping and cherishing a specific moment in time is quite often not possible without a camera at hand, especially for tourists who tend to carry these extensions to visual attention continuously (cf. Suonpää, 2008).

Leroi-Gourhan suggests that, in the evolution of human beings, our ability to stand on two feet was crucial for the development of gesture and speech, and thus too for images in effigy. This is because the human vertebral column and limbs are arranged in a manner that allows the human being to move about on two feet and reserve the hands for ever finer technical operations, such as creating and using a camera, as well as the face for a broad variety of articulations. The relationship between gesture and speech is not the “commonplace one whereby the hand participates in speech through gesticulation but […] an organic one, manual expertise corresponding to the degree of freedom of operation of the facial organs thus made available for speech” (Leroi-Gourhan, 1993: 36). The hand’s part in the technical arena frees the facial organs to develop articulated voice, as well as for a wide variety of technical operations coordinated between the face and the hands. Vision and manual gestures are coordinated so as to form images on one’s body, or images in effigy, such as in the coordination of hand and eye to apply makeup, create pictures still preserved on caves walls, or make death masks left in funeral rites. But also during camera use, vision and manual gestures are together used in techniques of the body forming images in effigy. We lift a camera with our hands and position it in front of the eyes in order to see what kind of picture we are about to “snap,” using our fingers for doing so.

The physical artifacts used by humans transform the relations we have with our bodies and our surroundings. Pictorial media, with cameras of special interest for this study, are especially related to the sense of sight and assist us in seeing things we are not able to see without them. Here pictorial media highlight the use of vision in interaction. Take as an example the mirror, a device crafted specifically to present on its surface an optical reflection of that which is in front of it. Hand-held mirrors, one of the earliest forms of mirrors, are used such that the hand holding the mirror can position it at an angle in front of one’s eyes in order to see one’s face or other parts of the body not visible
without external aid. Here manual activity, a specially crafted material artifact, and the movement of the eyes are combined to allow seeing more than meets the unaided eye. A technique of the body is combined with an artifact in order for the user to see more. Similarly, the technical principles of a camera obscura, helping to create within the camera obscura a reflection of selected scenes from the world without, enable novel kinds of techniques of the body, which are actualized in diverse ways in current camera use.

The mirror and the camera obscura are instruments that have to be moved manually to a desired position before they are of use. Once in position, they can be used in order to represent what could be seen if one would direct one’s eyes to the exact same position. The material mediation features a medium-specificity that matters (Lanzara, 2009). For example, the information gained from a mirror in front of oneself, as compared to another person looking at you and describing in words what she sees, comes in different forms, although both share images. Images travel in distinct ways.

Today, digitally networked camera devices are far more complex than a single mirror or camera obscura and do not always have to be used manually. Networked cameras contain elaborate technology, a systematized knowledge about techniques (Rammert, 1999). Many networked cameras have a sort of “operational memory” (Leroi-Gourhan, 1984), in which technical action is stored, and are at times able to transmit, for example, captured pictures to external servers automatically. For elementary techniques of the body, such as grasping, the operational memory is stored in the body using the technique, although the artifact grasped influences the ways in which it can be grasped (Dant, 2007). With the aid of artifacts, humans have started to exteriorize operational memory, as, for example, found in complex devices such as mobile camera-phones, which include cues for various kinds of techniques that can be reverse-engineered. The operating instructions of complex networked cameras are often prescribed in them, for example through buttons calling to be pressed, colors demanding attention, and textual instructions on user interfaces, and become thus available for people studying networked cameras (Leroi-Gourhan, 1993: 250; Gell 1999).

The contemporary use of the word “technology” in designating, for example, electronic information and communication devices is justified from this perspective, explicitly because of the wide variety of techniques inscribed in them (cf. Rammert, 1999). Unfortunately, the fundamental connection between techniques of the body and
complex ICT devices is often forgotten when one discusses digital camera technology or the ways in which material mediations shape practices.

Agency and affordances

The most disputed aspect of the role of mediation in practice theories is the question of its importance for social action. Do things that mediate our actions actually have agency at all, and, if they do, what kind of agency is it and what is the “amount” of their agency in comparison to that of human agents?

In the tradition of interaction rituals, as presented by Goffman and elaborated to perhaps its most extreme form by Randall Collins, things are used as part of social symbolization processes and do not have much effect on interaction. This tradition is especially important in discussion of non-professional camera use, since (especially) Goffman provides a theoretical backdrop for many empirical studies of non-professional camera use (Chalfen, 1987; Musello, 1979; Siibak, 2009). Collins, in expanding Goffman's theory, describes agency as “the energy appearing in human bodies and emotions and as the intensity and focus of human consciousness, arising in interactions in local, face-to-face situations, or as precipitates of chains of situations” (2004: 6). In this understanding, human bodies, not things, have agency which they can direct more or less successfully in interaction rituals.

In accordance with the relatively recent focus on non-human agencies in social scientific practice theories, I argue for taking into account the agencies of information and communication technologies and other non-human actors in shaping non-professional photo use, without deciding on their respective roles or agencies beforehand. (See also Miller, 2008)

My approach is aimed at empirically pointing towards possible agencies digitally networked cameras take on in interaction, because I believe this perspective to open a more balanced view of what occurs between social conventions and embodied symbolization processes, on the one hand, as well as material mediations, on the other. Belting’s (2001) relatively open triad of image, body, and medium serves as a backdrop for doing so, for avoiding the aforementioned advance decision as to the kinds of agencies things gain in interaction.

As we look more closely at the ways in which networked cameras mediate our interactions, it becomes clear that finding an answer is somewhat more complicated than
it may at first appear. Face-to-face interaction itself is already constrained by the medium of our bodies, as well as social conventions structuring how long we, for example, should look strangers in the eye, and whom we are allowed to touch in which situations, as described earlier. Some of these social conventions are inscribed in material artifacts that mediate our aesthetic relations and thus the ways in which we see, hear, smell, taste, and feel each other. These material artifacts, insofar as they favor vision, are in this study called pictorial media, since they both mediate our visual relations and place stress on them.

Pictorial media are used to distribute ourselves, enabling actions that would not be possible without them. For example, sharing representations of what we have seen with significant people who happen to be somewhere else is only possible with the help of specific kinds of techniques in which the body acts in combination with material artifacts, such as mobile camera-phones and 3G networks. With the aid of pictorial media, we can take pictures of what we have seen and transmit these images to significant others, who, with proper receiving devices, are able to regard the images we feel to be of importance. Here the action of showing what we have seen is distributed, residing in our human bodies as well as in the media that are our extensions.

Taking this perspective, the use of cameras is understood in this study to be distributed action between bodies and artifacts (Rammert, 2008). In networked camera use, the action of bodies is distributed to complex technical artifacts that modify, translate, expand, and delegate action. Bodies and the technical artifacts used form an assemblage for specific techniques, which would not be possible without the artifacts available. In this sense, pictorial action is distributed over a larger network, one that includes various artifacts and quite often a wide variety of actors.

Gell (1998) exemplifies this interconnection in terms of the distributed selves of soldiers, whose weapons are integral parts of them – in fact, making them soldiers. Soldiers are the kind of agents they are because of the artifacts they have at their disposal, the networks in which these artifacts are enmeshed, and the social practices developed in the use of these special artifacts. Their personhood is distributed, not residing plainly in their human bodies but as well in the media that are their extensions. It is in these ways that specific agents distribute themselves. Gell (ibid.: 21) reasons that “agents, thus, ‘are’ and do not merely ‘use’ the artefacts which connect them to social others.” The human body using an artifact is a different kind of entity than it is without
the artifact. Just as soldiers do, photographers, surveillants, eye tracking researchers, and other camera-users become the kind of entities they are through the interconnections they make with the artifacts at their disposal.

This distribution of action raises the question of agency, the capacity to act. Do only humans have agency, as Collins suggests, or do things mediate action in specific ways? Belting refers to the question of agency implicitly via the concept of the medium. The media of images relate to the body in two ways. On the one hand, in an echo from Collins, pictorial media are seen as symbolic carriers of images, regarded with an active look. On the other, Belting maintains that the ways in which images are transmitted via media and made visible differ, depending on the pictorial media at hand. It matters if we see images in corpore or images in effigy, for example. But, even more significantly, Belting maintains, in contrast to Collins, that media inscribe themselves in our embodied perception and change the way we perceive (Belting, 2001: 13).

But what is agency, and how do pictorial media act? Agency is understood in this study as the power to act, the capacity to make a difference in a particular situation (Dant, 2005; Latour, 2005b: 52). Endowed with agency, we are able to decide, for example, whom to depict in a given situation and what to do with the depiction. As agents, we are able to act. Without agency we remain temporarily “patients” (Gell, 1998: 22), and someone or something else acts on our behalf or with us. The term “patient” refers in this context to a situational passivity, as in “being patient” or “waiting patiently.” In order for the body to be an agent, it must act upon patients, themselves potential agents.

Appropriately, agency is, in dictionary terms, also referred to as the power to act on part of someone else. In various situations, we transfer our agency to third parties so that they can act on our behalf (while we remain “patients”). Advertising agencies are a case in point, bearing “agency” in their name, having specialized in creating images on behalf of someone else. Tim Dant shows how not only other people and institutions act on behalf of us but things do as well. Dant exemplifies this kind of agency with his telephone answering machine, which answers calls intended for him:

To act in this role it must identify itself as being my agent (through the message it gives callers) and accurately record messages for me to deal with later. Its actions stand in my stead and yet no one is under the illusion that it is me (except those who start to respond immediately
when they hear my voice and then feel irritated and cheated when they realize it is just a machine). (Dant, 2005: 60)

For action as an agent on Dant’s behalf, this kind of relation between humans and material artifacts has to be culturally established before it can be meaningful. The callers have to understand the notion of an answering machine in order not to “feel irritated and cheated.” The designers of telephone answering machines have to give them specific characteristics, which are intentionally designed into the devices. And answering machines have to be networked into a wider telecommunication structure so that other people can connect to the system with their own telephone devices.

The notion of agency should be taken further, since people interact with telephone answering machines but, as well and of more importance for our empirical examination, with camera devices directly,

not simply via advertisements, instruction manuals or labels inscribed on their surfaces (such as “Volume” printed beneath a control on sound equipment). Consumers communicate through sight, touch and sometimes other senses, using their whole body to both make sense of and to make use of the things around them. (Dant, 2007: 15)

An important notion in thinking about the relationship we can adopt to material artifacts with our bodies is Gibson’s (1988) suggestion that the things we interact with operate, in turn, on the humans and animals using them, by “offering,” or affording specific relational uses. Gibson terms these offerings “affordances.” They cannot be measured with a single set of scales; they are *relational* with respect to those using the things. How devices look and feel, how much they weigh, and how easy or difficult it is to carry them around all affect the ways in which cameras are used (see also Norman, 2002; Latour, 2005b; Dant, 2005).

A heavy camera that needs to be assembled from various separate parts before it can be used for picturing does not afford point-and-shoot photography, whereas a small mobile camera-phone is usually easy to carry around and can be prepared for photography within seconds.

Camera devices afford specific relational uses, which depend on those using the devices. Whereas a mobile camera-phone affords ease of use to a young adult with good vision and motor skills, for older adults the screen might be too small to decipher, as might the buttons used for navigating the instrument’s interfaces. The techniques
available to us depend on our bodies but just as much on the things at our disposal that we use as media in actions.

There is enormous variety in affordances, but the focus on affordances helps also in pointing out clear constraints: “Objects can be manufactured and manipulated. Some are portable in that they afford lifting and carrying, while others are not. Some are graspable and others are not. To be graspable, an object must have opposite surfaces separated by a distance less than the span of the hand,” elucidates Gibson (1988: 133).

The theory of affordances is inviting because it suggests a physical world with things interacted with, which afford different kinds of uses that cannot be reinterpreted over and over again (Costall, 1995, 1997; Hutchby, 2001). The theory claims that, independent of whether someone actually uses an object according to its affordances for that specific person, the affordances still exist. The best example of affordances I have come up with is a mountain-climber practicing a specific route on a climbing wall and not noticing a certain climbing hold necessary for progressing. Climbing the same route the next day, she notices the hold that affords her climbing upward. The hold has been there all the time, affording climbing up, independent of whether the climber actually notices it.

According to this understanding, a camera device itself, irrespective of any intentions of its designers, is perceived and gestured with according to the materiality of the device – for example, how it fits in the hand of the person interacting with it. Some kind of cultural knowledge seems to be a prerequisite for interaction with the device in the first place, be it only because of understanding that the device is an artifact, a made thing, or the climbing hold suitable for climbing. (Dant, 2005: 75–76)

A camera fitting the hand affords lifting it up, placing it in front of one’s face, and positioning one’s eyes behind the viewfinder in order to look through it. But it also affords throwing, for example, at small animals while hunting (because of its size and weight) and hammering nails into wood (if the camera is made from durable material). Affordances suggest a physical world that bodies interact with, which is different to each actor. Depending on one’s physical size, motor capabilities, and sensory system, the world affords itself very differently to us. Each of us lives with different things around her, although they might appear to be the same.

The notion of affordance is of special importance in attempts to understand how cameras mediate our actions. Specific devices, such as a camera, afford particular uses,
in this case, including the taking of photos, use of the photos in order to remember particular events, or just application as a means for focusing mutual attention on a common topic – such as the “beauty” of a specific moment or particular scenery.

The differentiation drawn here between images in corpore and images in effigy ties image use to embodied practices, which have their early forms in fundamental anthropological experiences. “The significance of an anthropology of the image lies in querying the beginnings, in order to understand the symbolic actions that we perform with images,” states Belting (2001: 143 – my translation).

One of these beginnings is the techniques of the body that have since been partially exteriorized into materialized artifacts. When bodies assemble in combination with material artifacts, the artifacts, in medium-specific ways, afford particular actions but not all kinds of actions. It is this relationship between body and medium in image use that is of special interest as we try to understand the ways in which cameras mediate our actions.
Chapter 2

Networked cameras and asymmetrical uses of the visual

A brief history of converged techniques

Following the approach drawn from Belting’s anthropology of images and practice theories considering material mediations, we need to ask what these networked cameras are in relation to techniques of the body. What kinds of things are cameras today?

Cameras consist of a dark chamber and a small circular opening allowing light to enter it, used mainly in order to represent within the chamber (the camera) that which is without. The principle on which cameras are based was already known to Aristotle (384–322 BC) from observations of the image of the sun passing undistorted through wickerwork. (Osborne, 2001a)

Today, cameras are embedded in ever more devices that are digitally networked. In using these cameras as part of specific actions, the bodies and devices form an assemblage in which they together act. An important part of distributing action between bodies and digital cameras happens via software.¹⁹ The various applications used for editing, sharing, exhibiting, and archiving digital images all have specific software used, for example, in order to capture single photographs or consecutive pictures; transform these into appropriate formats (such as .jpeg, .tiff, or .gif); and attach metadata to the pictures, which can be automated (as with the EXIF standard) or manually added, usually only after capture. The various formats and software applications are interoperable with other formats and software, extending the possible uses of pictures almost infinitely. These pictures taken with cameras are part of digital electronic

¹⁹ “Through the employment of various mathematical algorithms, programs process data to produce a requisite output, thus enabling systems to operate. Again in simple terms, software development involves the writing of programs by software developers and computer programmers drawing upon various languages and programming techniques. The language and the programming techniques employed will depend upon the task in question,” state Thrift and French (2002: 331; see also Ridell, 2009).
information and communication technologies (ICTs) (Manovich, 2002; Heidenreich, 2005).

With networked cameras we have an ongoing process of ICTs being used for actively automating techniques of the body, expanding the capability to store and use large volumes of data, converging distinct modalities, and creating novel possibilities to communicate and act in interactional environments (Seipel, 2002: 21–23; see also Manovich, 2002). Cameras are built into ever more devices, used in ever more social situations, and they have become ever more networked.

In this sense, current cameras can be understood as digitally networked “hybrids” (Latour, 1993) that connect various data to ever more networks. The concept of the hybrid is useful in pointing toward the unclear identities of many things, turning attention to the kinds of connections that artifacts enable and thus to the relations they become part of. The recombinant nature of ICT especially confounds conventional classifications, of, for example, photography, video, and telephony (cf. Lievrouw, 2002). The understanding of networked cameras as hybrids assists in stressing the modularity of later black-boxed technologies.

The hybrid character of things has been worked out by Bruno Latour (1993, 2005), who shows that “things” have an embodied etymology, echoing Mauss’s discussion of technique and Leroi-Gourhan’s conceptualization of gesture. Etymologically, the word is related to the German Ding, with early meanings including meeting, matter, concern, and inanimate objects (“Thing,” 2010; “thing,” 2009). Latour focuses on the early uses of “thing” and “Ding” to denote assemblies, which we still find in parliament names, such as the Storting in Norway and the Althing in Iceland. The Icelandic Althing, the general assembly, is an especially good example of the old uses of “thing,” since it originally came together at a specified meeting point, Thingvellir (the assembly fields). At Thingvellir, the Althing gathered to decide on matters of concern, on things to be decided. In Swedish, specific court buildings are still called tingshus, carrying similar associations related to the concept of the thing.

Thus, long before designating an object thrown out of the political sphere and standing there objectively and independently, the Ding or Thing has for many centuries meant the issue that brings people together because it divides them. (Latour, 2005a: 12 – emphasis in the original)
In studying hybrids, Latour proposes paying attention to what has to be assembled, or brought together, in order for a hybrid to emerge.

Focusing on the material mediations visible in images in effigy, that are taken with digitally networked cameras and shared on photo-sharing sites, we can start to unbundle some of the techniques assembled. For example, a digital photo taken in a popular tourism setting, such as at the Sibelius monument in Helsinki (see Figure 1), is reconstructed by software when it is looked at from the screen of an ICT device, then transformed again, into a specific binary format, such as JPEG, when stored. Material in these formats can be submitted to photo-sharing sites such as Panoramio, where the

Figure 1. A picture posted by Pinggu on a photo-sharing site called Panoramio. The motif is a popular tourist sight in Helsinki, the Sibelius monument. 20

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20 For reasons of readability the sources for Figures are mentioned in the References, under “List of figures.”
photo can be named, positioned on a separate map consisting of grids and satellite imagery, and tagged so that it can be found more easily and commented upon. Additionally, details of information obtained during the exposure of the picture, as well as of its “life” on the photo-sharing site, can be looked at. The picture itself can be connected to other photos and seen via other software applications, such as in the three-dimensional model of the earth presented by Google Earth or as part of the Google Maps map application. The interconnection of pictorial media, business models, and shared conventions influences how these images are used in non-professional situations.

With the question of the mediation that cameras provide for in mind, I am especially interested in understanding how our bodies and digitally networked cameras enable specific actions. How are bodies and camera technology assembled when using images that are captured, distributed, and shown with the aid of networked cameras and related pictorial media?

A closer look at the screen capture from Panoramio shows various camera pictures that represent something visible. In the figure, we have various pictures of the Sibelius monument, taken at different times, as well as an aerial photo of the geographic location at which the monument can be found. The aerial photo extends the reach and scope of the visible, augmenting our knowledge of the location where the photos of the monument have been taken. The pictures are fixed, not transient, and can be reproduced in various ways. The picture of the monument can be transmitted automatically to a micro-blogging service called Twitter, as well as to the Google Earth software application. The figure integrates pictorial and non-pictorial information, in the form of comments, Tags and GPS location data, along with the photos themselves, are stored as non-pictorial information that is used each time to create the photo anew. We have non-pictorial information, such as location data, that is used to create maps, and when we move the cursor over the small pictures in the upper right, the fixed images are animated upon scrolling to the left or right.

The figure includes traces of a variety of technical features that we find separately or in other constellations also in other digitally networked camera pictures. Quite often, photo innovations in the ICT domain combine some of these features in order to create something considered new, and, thanks to the recombinant nature of digital electronic ICTs, ever more applications afford several surprising combinations.
A common misperception suggests that the possibilities for image use in a digitally networked “camera” rely mainly on relatively novel inventions, and that digital electronic ICTs are the major ingredient for these inventions. This misperception is complemented by a general idea that ICTs have in one way or another “revolutionized” previous human techniques. A reason for this misperception is pointed out by Kevin Robins and Frank Webster, who show that in recent decades there have been various discourses supplementing the idea that we would be living in a time “without precedent in the scale, scope and speed of historical transformation” (1999: 1). In going through the history of these discourses, they point out the talk of a “microelectronics revolution” in the 1970s, when silicon chips became widespread. The capacity to process and store data was discussed under the heading “IT revolution,” whereas talk turned in the 1980s toward the communicatory possibilities of IT and a “C” for “communication” started being added to the former “IT revolution.” The “ICT revolution” then was discussed, and the 1990s, with the popularization of the Internet, brought the terms “information superhighway” and “network society,” denoting the interconnectedness of various parts of the world, as well as the speed, scale, and scope of information transmission. Robins and Webster point out that “cyber-revolution” and “virtual society” became newly widespread terms at the end of the 1990s. For the last decade, “ubiquitous interaction,” “pervasive computing,” and “Web 2.0” have been similar concepts, pointing toward embedding of ICTs further in everyday life, transforming the ways in which we interact.

In contrast to the “revolutionary” discourses, it is useful for the study of networked camera technology and its possible uses to look at the broad and varied histories of networked cameras from the perspective of techniques of the body, and from the connections bodies appropriate with artifacts in order for us to act meaningfully. The eyes as our visible organs of sight and pictorial media created explicitly for seeing or being seen form assemblages that are only meaningful as part of specific contextual techniques. The anthropology of images suggests that this meaningfulness is not tied to one specific spatiotemporal setting but bears anthropological traces that can be connected to the possibilities and constraints of our human bodies. The constellation is complicated by our enculturation into using specific techniques of the body and development of specific associations attached to them, which vary from setting to setting.
This kind of approach helps in showing the continuities in image use and leveling out the claimed impact of novel material bases for techniques of the body. The “revolution” of ICT is from this viewpoint less a rupture between old and new and more a continuation of existing techniques and an experimentation with novel ones.

**Desires for techniques**

A technique, here understood as effective and traditional action, is created in order to achieve specific results. For the history of camera use, the desire for a technique to fix representations of the seen mechanically was integral to the invention of photography as commonly understood.

In 1828, Louis Daguerre wrote to his partner Nicéphore Niépce, stating that he was “burning with desire to see your experiments from nature” (Batchen, 1999: iix). Niépce had been able to fix his first images taken with a *camera obscura*, and Daguerre teamed up with him in order to develop finer and more refined techniques for doing so. Geoffrey Batchen traces the conception of photography, “the desire to have images spontaneously inscribe themselves on a light-sensitive surface” (Batchen, 1999: 180), to significantly earlier than the 1839 usually mentioned as the date of the invention of photography, by Louis Daguerre and Isidore Niépce, Nicéphore’s son. Batchen explores a variety of historical artifacts, including letters, novels, and publications of technical inventors, in order to show that the desire to fix a representation of the seen mechanically had emerged forcefully already in the late 18th century, with a wide variety of proto-photographers experimenting with various techniques for doing so. Batchen focuses in his analysis, with the help of Foucault’s genealogical method, on both human and non-human actors, on the techniques invented by physicists and chemists, and on the concepts and metaphors employed at a given time.²¹

The desire to fix a representation of the visible mechanically, instead of having to rely on manual activities such as drawing and painting, could be found among a wide variety of actors working toward a similar goal. Batchen stresses the spatiotemporal exclusivity of the desire to photograph: a discourse for desiring photography emerged only between around 1790 and the 1840s as part of a specific discourse formation.

²¹ Batchen is explicitly interested in material mediations and the question of boundaries of the human: “Who can any longer say with confidence where the human ends and the nonhuman begins?” (1999: 214).
Instead of discussing desire as a psychoanalytic “universal and fundamental lack in the being of an individual subject” (ibid.: 181), Batchen follows Foucault in thinking of desire as “a positive unconscious of knowledge: a level that eludes the consciousness of the scientist and yet is part of scientific discourse” (ibid.: 182, citing Foucault – emphasis in the original), stressing the interrelation between desire and discourse. Here the desire “to have images spontaneously inscribe themselves on a light-sensitive surface” is possible in consequence of a discourse formation enabling the articulation of such a desire.

Batchen’s historical thick description of how, at a particular time in specific circumstances, it was possible, or perhaps inevitable, to focus on finding techniques for fulfilling a specific desire is especially interesting – in itself but also as a cue for trying to understand broader developments in human creation and use of pictorial media, as outlined in Belting’s anthropology of images. The desire to find a technique for fixing a representation of the visible, a “desire for a technique,” points toward the desires of the body as a source of much of image use. The specific techniques applied and artifacts created differ in line with particular spatiotemporal settings, but all can be seen to have special interest in the body’s relationship to itself and an external world.

As argued above, techniques of the body in many cases existed before a specific device was invented that exteriorizes bodily functions and organs, acting as a conduit between the body and the world (Mauss, 1973; Dant, 2005). Desires for techniques that assist the body in its actions have long been with us and are not merely tied to one particular sociocultural setting; they have an anthropological foundation. Batchen’s work, therefore, is taken here as inspiration in pointing toward continuities in the use of pictorial media while acknowledging the historical specificity of special constellations of image use and technological development.

Without engaging in historical description similar to Batchen’s, I still believe it to be possible to reconstruct a set of techniques recombined in current networked cameras that explicitly show the connection between bodies and the artifacts used, the fundamental interrelation between images in corpore and images in effigy. Here the desire for techniques is a productive force, partaking in the creation of artifacts that are used.

Proceeding from our understanding of the relationship between images in corpore and images in effigy, which rely on techniques in order to be perceived and fabricated, we are able to look at pictorial media as bearing traces of desires of our bodies.
In the history of camera pictures, I have identified six exemplary desires that led to inventions transforming something that earlier was either not possible or done manually with one’s body. So these desires for techniques consist of an exteriorizing gesture, linking the invention of various pictorial media to an anthropological understanding of the body as outlined above. These desires consist of finding automated techniques to

- represent the seen,
- extend the reach and the scope of the visible,
- fix the seen in time,
- reproduce representations of the seen,
- transmit the seen in space, and
- converge the seen with other kinds of information.

Many other technical features that camera manufacturers focus on consist mainly of incremental innovations, such as providing greater accuracy, lower cost, higher speed, more portability, stability, different ways of creating images, various ways to regulate accessibility, and novel forms of interconnecting techniques that have been exteriorized. These incremental innovations are especially important for actual uses of camera-bearing devices and the kinds of images created with these cameras, but from an embodied perspective the technical changes are often incremental, providing for versatility and a broader range of specialized uses.

Automation is of special importance for the development of networked cameras and their increasing use, since images having only the body as location have regularly been questioned: “The skepticism toward the reliability of images, underscoring the belief in their efficiency, was the anthropological impulse for creating techniques of the image that cannot err because they contain automatisms,” states Belting (2001: 41 – my translation).

For photography, these automatisms have been discussed particularly in relation to photography’s “indexicality.” The connection of what is depicted to that seen in a photograph, the visible result of automation, is treated in a wide array of photo use as an inherent quality of photography. Indexicality is, as Gillian Rose (2010: 506) suggests, an affordance of photographs: “As an affordance, it is one of a photograph’s inherent qualities; but it is only realized and significant as it is ‘activated’, as it were, by particular practices.” Rose’s insistence on the “activation” of indexicality as part of practices hints at the importance of specific circumstances in which affordances make sense.
In the following discussion, I will present a brief historical overview of the convergence of pictorial media and the examples I have cited above of desires, which have been identified through analysis of an image shared on a photo-sharing site (see Figure 1). The intention in focusing on embodied desires for techniques is to show how exteriorized techniques of the body have been recombined differently in the history of pictorial media and are often grounded in inventions made surprisingly early. The desires for techniques assembled in current networked cameras each have their own history of techniques and formal operations, reaching far beyond the “microelectronics revolution” of the 1970s. This perspective adds depth to the term “cam era,” in showing that many of today’s uses were already possible over a century ago, although the work necessary for implementing them on a larger scale would have required an enormous workforce. As we identify desires for techniques, technical artifacts are viewed as being in a dialogue with the beholder, who conveys her desires to the media used and creates new experiences with them (Belting, 2001: 41).

Representing the seen

The eye has been long the main organ for looking, used by bodies in order to see around them. Seeing itself is a synthesizing gesture, in which we connect external and internal images with the aid of an attentive look. We are able to represent and animate what we have seen both when remembering previous lived experiences and in dreams, hallucinations, and visions. The first exteriorizations of the seen came about through the aid of drawings and speech, translating the seen for oneself and for other people. Today, we are overwhelmed with all that can be seen without being present bodily at the locations depicted. Photographs in newspapers, streams of images on television, and the increasing amount of visual material streamed live over the Internet give us the possibility of visiting locations in images without a need to be bodily collocated at the places depicted. Afforded by an increasing number of techniques for representing the seen, the representational sphere around us has exploded. Ever more of what we see is translated into pictorial representations.
Whereas the body is our first location of images, that we use for synthesizing and animating a wide range of inner images, these images are ephemeral and difficult to control. Exteriorizing these images with the assistance of material artifacts enables us to control them. The credibility of images once they have been exteriorized is at times questionable; therefore, automatisms have been sought for circumventing the question of credibility.

The mirror must have been the first artifact to carry an automatic principle for reproducing the visible, by reflecting reflected light, a form of electromagnetic radiation. Hand mirrors were in use in Mycenae around 1400 BC ("Mirror," 2007), helping bodies to see that which, because of physical constraints, might easily remain unseen. Although other surfaces such as water reflect images as well – as perhaps best known through the Greek myth of Narcissus, who fell in love with his own image reflected in the water – the invention of a specially designed mirror was an important stepping stone in the history of networked camera pictures, since it is a device specifically constructed with the purpose of representing what can be seen.
The digital cameras in use today depend on a dark chamber that has a small opening allowing rays of light to enter. Opposite the opening, which is usually a circular hole, an inverted image of the scene thereby depicted is created. Here the seen is represented as well, but somewhat differently than with a mirror. This automatic principle, which has become known as “camera obscura,” was known already in ancient Greece. Later, Alhazen used a specially built camera obscura for observation of astronomical phenomena, such as solar eclipses, and Alberti (1404–1472) as an aid for drawing. Probably the first published illustration of a camera obscura is from De radio astronomico & geometrico liber, by Rainer Gemma Frisius (1545) (Figure 3), who suggested using the device for astronomical observations, especially, again, solar eclipses. Giambattista della Porta (c. 1535–1615) emphasized in his Magia Naturalis (1558) the magical qualities of the device, as well as its use for drawing (Osborne, 2001a; Fiorentini, 2006).

The device as such was thus seen to be useful for understanding aspects of light, making astronomical observations, and enhancing artists’ capabilities for “natural” drawings. Arguably, it was also a device for spectacular entertainment, and Johannes Torrentius (1589–1644), a Dutch painter using a camera obscura for still-life paintings, was accused of witchery. In 1676, Johann Christoph Sturm had a portable camera obscura, with a focusing lens and a reflex mirror – built around the same basic principles as 21st-century single-lens reflex cameras (SLRs) (Osborne, 2001a; Fiorentini, 2006).
Additionally, the *camera obscura* figured, according to Jonathan Crary, as an important metaphor in very distinct theories, such as, on the one hand, Locke's and Descartes's disembodied subjects, with a “conception of the human mind as an inner space in which both pains and clear and distinct ideas passed in review before an Inner Eye… The novelty was the notion of a single inner space in which bodily and perceptual sensations… were objects of quasi-observation” (Crary, 1992: 43, citing Rorty). On the other hand, Marx and Freud saw the same device as “a model for procedures and forces that conceal, invert, and mystify truth” (ibid.: 29).22

Already these examples show how “[t]he formal operation of a camera obscura as an abstract diagram may remain constant, but the function of the device or metaphor within an actual social or discursive field has fluctuated decisively” (ibid.: 29). The images seen with the help of a *camera obscura* were at some times considered true and illuminative and at others false and magical. What is of importance from the perspective applied here is the historical continuities in use of the *camera obscura* as part of techniques of the body, assisting in distributing the body with the formal operations of a pictorial medium. The *camera obscura* is similarly an apt example showing how contextual associations in performance of these techniques have long been heterogeneous and discrepant. The automatisms for representing the seen, afforded by the *camera obscura*, are truly activated differently as part of different practices.

Perhaps the latest addition to these technical means of representing the seen comes from eye-tracking technology, in which, for example, pupil-centered corneal reflections are used for tracking eye movement in relation to recorded visual stimuli. For this purpose, an eye tracker takes various photographs with specially designed cameras, often at rates between 30 and 2,000 hertz. Specially developed algorithms are applied to calculate where the subject's pupils are directed, suggesting foveal gaze direction. The foveal gaze direction is again assumed to link to visual attention. Visualization of the results, for example via gaze plots (as in Figure 4), is of importance when trying to understand what those researched have actually seen. The desire for a technique to represent the seen is here met again in relatively novel ways. (cf. Duchowski 2007)

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22 For a discussion of changing notions of the *camera obscura* in relation to its status as a means of observation, see Crary (1992).
Figure 4. A visualization of the seen from examination of Figure 1, created with the aid of a Tobii T120 eye tracker and the Tobii Studio Analysis software. The red dots suggest foveal gaze, and the connecting lines scan paths.

**Extending the reach and the scope of the visible**

People have always known that there is more out there than we are able to see with our eyes, or sense via our other senses. Spirits, angels, gods, and demons have long populated Earth, and prophets, saints, and visionaries serve as their media, helping the uninitiated to see more than meets their eyes. Pictorial media, such as the mirror, lens, and *camera obscura*, have been of special importance in broadening our horizons and helping us to see other things than we would without them. In our example Panoramio image, pictorial media used from above show more than we are able to see at the locations without them. The body and a camera taking pictures from above form a specific assemblage helping us to distribute ourselves.
The construction of technical devices for better sight of the far and near is tied to the invention of lenses, which were known already to the Minoans around 2000 BC (Saxby, 2005). In the 13th century, spectacles were invented in Pisa, which helped those with poor eyesight to see better (Morrison-Low, 2005). While many applauded the invention, Mr. Cross, Vicar of Chew Magna in Somersetshire, declared, in a similar fashion to 20th-century visual criticism, “The newly invented optick glasses are immoral, since they pervert the natural sight and make things appear in an unnatural and a false light” (Fells, 2001, citing Cross). Although there was suspicion, these discoveries led to further technical developments that resulted in Girolamo Cardano (1501–1576) suggesting in 1550 that using a lens at the pinhole of a *camera obscura* might improve the accuracy of the image obtained (Osborne, 2001a; “Camera obscura,” 2003).

Although astronomers had used *camerae obscurae* for observing the sun, and lenses helped people with poor eyesight to see better, it was not before invention of the telescope and microscope that new forms of the previously unseen became visible. In 1608, Dutch optician Hans Lippershey invented the refracting telescope, which uses a lens, and in 1609 Galileo Galilei (1564–1642) had optimized one enough for studying astronomical phenomena, such as lunar mountains (see Figure 6) and stars that remained invisible to the unaided eye, as well as, for example, the moons of Jupiter. The
enhanced quality of lenses made it possible to turn one's attention toward things that are extremely far away. Kepler improved the telescope to form images on its focal plane, which again could be viewed by a magnifying lens. By 1668, Isaac Newton had created a reflecting telescope, using mirrors instead of lenses for astronomical observations (Finocchiaro, 2003; “Telescopes, Optical Astronomical,” 2009).

![Figure 6. The moon as observed by Galileo via a telescope, carved and printed for reproduction in his Sidereus Nuncius, Venice, 1610.](image)

After the first invention of a telescope, enabling looking at things far away, it was not a great leap to using an optical device for looking at things that are very close but extremely small. The microscope seems to have been invented in the 1620s: the first published descriptions and drawings of an item looked at via a microscope, a bee, were published in the Melissographia and Apiarium in 1625 (Schickore, 2003). Lenses were clearly important for working on a desire that many camera pictures rely on: they extend the reach and scope of the visible and thus of the knowable. The body distributes and enhances its capabilities with the aid of technical devices.

These were important stepping stones for furthering experimental investigation of the natural world. Experimental devices and whole laboratories could be built to study the world around us, without which the knowledge gained would not be approachable. Latour (1993) has argued that the 17th century, especially debates between Robert Boyle (1627–1691) and Thomas Hobbes (1588–1679), were constitutive in creating a modernity
that separates nature and society, experimental natural sciences and humanities, and in the end laboratory work and conceptual work.

In the 19th and 20th centuries, devices have been invented that focus on other electromagnetic radiation than light, such as radio waves, infrared radiation, ultraviolet radiation, x-rays, and gamma radiation, and thereby further extend our knowledge of that which remains unseen to the unassisted eye. Networked cameras, such as the Hubble Space Telescope’s Wide Field and Planetary Camera (WFPC2), but equally radiological devices, such as Wilhelm Röntgen’s methods for x-ray radiography, make entire realms visible that we are unable to detect directly with our embodied senses. The knowledge gained is visualized with varying means in pictorial form, allowing bodies to access it.

The desire for a technique to see more than meets the eye is not bound to specific devices, such as cameras, but can be found in other fields of study as well. Camera pictures thus are part of a larger field of technical imaging, in which automated devices are used to create images that are extremely difficult, and at times impossible, to create manually.

**Fixing the seen in time**

The images seen with the aid of technical artifacts such as mirrors, *camerae obscurae*, telescopes, and microscopes long remained inseparable: the images created could only be apprehended at the place where they were created. Artists and scientists did make the images portable, but they always had to translate the automated pictures by hand, by drawing them on paper, or engraving new materials as, for example, Galileo did with his observations of the moon (see Figure 6).

The desire to have a technical device for automatically fixing the seen is usually seen as having been fulfilled with the birth of photography (Osterman, 2007). Through fixing of the seen, the ephemeral quality of our visual sensory experience can be held steady and transported from one location to another. Conquering time and space had been possible with manual techniques, such as drawing and painting, but having a technical device for automating the process became an issue for ever more people from the 18th century onward. A widespread focus on finding novel techniques for fixing the visible led to the first successes in the early part of the 19th century (Batchen, 1999).
For centuries, empirically oriented artists and scientists in Europe competed with a Christian worldview that focused on transcendence, manifested in Cennino Cennini’s (c. 1370 – c. 1440) account that the task of painters is to “discover things not seen, hiding themselves under the shadow of natural objects” (Osborne, 2001b, citing Cennini). A novel technique for fixing the visible emerged in roughly 1413 when Filippo Brunelleschi discovered a technique for creating central perspective, helping to transpose a three-dimensional vista to a two-dimensional picture plane (Osborne, 2001b; Morrison-Low, 2005). Alberti’s *Della pictura*, in 1435, provided the first full written account of creating a scientific perspective construction that painters could use. He coined the famous metaphor of viewers being able to look at a framed perspectival painting as if looking through a surface of transparent glass framed as an open window is. For Alberti this meant not that paintings would be realistic but that they would open up a perspectival picture space that could be filled with various subject matter (Friedberg, 2009). Central perspective enabled similar paintings to those seen via a pinhole *camera obscura*, the viewer having a single fixed point of outlook upon the scene depicted as well as the scene’s elements converging centrally. Various artists and scientists used perspectival techniques for creating fixed images, among them Leonardo da Vinci and Albrecht Dürer. Both of them created devices for assisting perspectival drawing, trying out a
variety of perspectival grids, as well as strings (ibid.). Dürer’s woodcut *Draughtsmen Drawing a Lute* (1525) is a famous example of using devices for making perspectival drawings (see Figure 8).

![Image of Albrecht Dürer's Draughtsmen Drawing a Lute](image)

Figure 8. Albrecht Dürer’s *Draughtsmen Drawing a Lute*, first published in *Underweysung der Messung, mit dem Zirckel und Richtscheyt, in Linien, Ebenen unnd gantzen corporen*, Nuremberg, 1525.

The invention and use of lenses somewhat distorted the geometrical perspectival calculations, and artists such as Jan Vermeer (1632–1675) replicated the optical distortions that lenses used in *camerae obscurae* provided, thus underscoring the mediating role of the technical drawing aids for final paintings (Osborne, 2001a). David Hockney has even argued that development of high-quality optical glass used for lenses and mirrors affected European art heavily, contributing to the development and adoption of perspectival drawing and painting (Morrison-Low, 2005). The invention of the photographic process, which finally enabled fixing the automated reflection of the visible, turned artists away from linear perspectival techniques and gave painters the opportunity to explore humans’ perception of their surroundings more freely.

From an embodied anthropological perspective, the desire for a technique to fix the seen with the aid of instrumental techniques had its historic predecessors, such as perspectival techniques and various drawing aids. Batchen shows that “the desire to have images spontaneously inscribe themselves on a light-sensitive surface” was inextricably linked to a particular historical setting, which enabled the specific recombinations that later led to the “birth” of photography.
Here discovering and understanding chemical reactions with light was integral to the creation of photographic images. Chemical changes wrought by light rays had been noted at least since the 16th century, when Georgius Fabricius (1516–1571) recorded that silver blends exposed out of doors darkened. Carl Wilhelm Scheele (1742–1806) noted in 1777, publishing his results, that ammonia dissolves unexposed silver chlorides. Importantly, having the knowledge of how to fix images “drawn with light,” Scheele did not use his knowledge for that purpose. Later, for example, Thomas Wedgwood (1771–1805) focused on recording images on paper and white leather coated with silver nitrate. He and his collaborator, Sir Humphrey Davy (1778–1829), published their findings in 1802 in the *Journal of the Royal Institution*. Although a scientist, Davy did not find Scheele’s publication that would have aided them in fixing their images of insects’ wings and leaves laid on paper and leather (Wilder, 2005).

It took until 1816 before Joseph Nicéphore Niépce (1765–1833) was able to partially fix images created with a *camera obscura* (Osterman, 2007). Of his various experiments, the first still remaining fixed image, today barely visible, dates from 1826. It is an image taken from inside the estate Le Gras, in Saint-Loup-de-Varennes, the picture itself depicting a street view seen through the window. It is believed that the exposure took around two days, whereas other images could have been captured with an exposure of several hours. Niépce termed his images “heliographs,” sun drawings. Figure 9 shows a reproduction of the image, being an apt example of how images and media converge, but also how the pictorial media at hand have an influence on the time images remain “fixed.”
Sir John Herschel (1792–1871) discovered that sodium thiosulfate (“hypo”) could fix chemical processes triggered by light. In 1819, he published this discovery, which Louis-Jacques-Mandé Daguerre (1789–1851) used in 1839 for fixing his daguerreotypes (these were based on collaborative work with Joseph Nicéphore Niépce and, after the latter’s death, with his son Isidore). Daguerreotypes were created on copper plates, coated with silver iodine. After exposure to light, the image was developed with mercury vapor and fixed with the process discovered by Herschel, using sodium thiosulfate (ibid.).

Although fixing of an automated reproduction of the visible had already been achieved by the elder Niépce, Daguerre’s innovations were important not only because daguerreotypes were more accurate and faster to create than heliographs but also because he was able to sell the invention to the French government and convince it of the benefits of opening Daguerre’s patent to the French public free of charge. Daguerre convinced first the director of the Paris Observatory, François Arago, of the benefits of his process. Arago announced Daguerre’s process to the Academy of Sciences on the 7th of January 1839 and explained it in detail on the 19th of August 1839 in a joint meeting of the Academy of Science and the Academy of Fine Arts in Paris. Daguerre and Isidore Niépce were both rewarded generously with a monthly pension for selling the daguerreotype’s patent, as well as explaining the heliograph process. Their business model of selling their invention to the French government helped to make daguerreotypes widely available, daguerrotypes spreading quickly in France, and later
with licenses to various parts of the world. All of these fixed images were unique and could not be reproduced directly (ibid.).

*Reproducing representations of the seen*

Heliographs and daguerreotypes are unique and cannot be reproduced over and over again. Today's picture-saturated environments, however, rely on multiple reproductions from the same source. Instead of having millions of unique images in effigy with unique content, we see quite often the same images over and over again – be they the same advertisements on various billboards in a city, newspaper photos of political events in several newspapers, or the same graduation images sent to several relatives. With several reproductions that are the same, visual content can be ordered and controlled and so can the connotations that are carried with specific visualizations. Whereas various current forms and uses of images rely on multiple reproductions of single pictures, as shown in Figure 10 reproducing the photograph shown in Figure 1, this was not possible with the earliest fixed automatic representations of the visible.

The usefulness of being able to reproduce multiple images from one source was acknowledged early on: textiles were printed in Europe from woodblocks from the sixth century on. In East Asia, most notably Korea and Japan, religious documents were printed from woodblocks in the eighth century, and especially large collections of Buddhist texts were printed until the end of the ninth century. Woodblock printing in Europe is presumed to have started in the late 14th or early 15th century (“Printing,” 2009).

Ordering of prefabricated characters made from clay was done in China already in the 11th century, and from metal in Korea in the 13th century. In Europe, Johannes Gensfleisch zur Laden zum Gutenberg (1394/9–1468) had a commercial printing venture in 1450 that employed a printing press with individual letters in raised type. Already these techniques enabled multiple reproduction of text and images, but it took almost 400 years yet to reproduce representations of the visible by mechanical means. (ibid.)
Other printing techniques, such as engravings (15th century – see “Engraving,” 2001), etchings (c. 1513 – see “Etching,” 2009), mezzotint (1640 – see “Mezzotint,” 2009), and lithography (1798 – see “Lithography,” 2009), were invented over the next centuries. These were important for transferring and printing images seen with camera devices, such as the camera obscura, or prisms, such as the camera lucida (from 1806; see Fiorentini, 2006). Although printing-based techniques provided good results and remained in partial use after the invention of photography, all of these techniques rely on manual labor for creating an original used for reproduction.

With the rise of modernity, industrialization, and mass production, techniques for mass production of images became ever more interesting. Various projection devices early on reproduced ephemeral images of fixed pictures, which were first usually drawn by hand on a transparent medium, such as glass. Here the idea of the camera obscura was
turned around: the projector was a source of images shown on the outside, instead of a container of images from the outside. *Laternae magicae* were in use since the 17th century, facilitating traveling bodies' projection of their visualizations to interested spectators (see Figure 11). Étienne-Gaspard Robert (1763–1837) created the “Phantasmagoria” in 1798, using a *laterna magica* on wheels, smoke, and movement, as well as projection from behind the audience, in order to tell captivating stories of the French Revolution (Burns, 2010). If printing out negative images is not counted as projection, the first photographs were projected in 1861, when Jan Purkinje (1787–1869) used stroboscopic projection to represent blood circulation and heartbeat (Rossell, 2005b).

Most importantly for the history of photography, Henry Fox Talbot succeeded in 1835 in creating his first negatives as part of work on his photographic process that he called photogenic drawings. They were published in 1839, because Talbot had heard of Daguerre and Niépce's work and thought that he would have to rush in presenting his findings. In 1840, Talbot further invented a negative-positive calotype process, which combined a novel method for creating negatives with photogenic drawings that allowed Talbot to print his negatives on paper. The first book with printed photographs, the first part of *Pencil of Nature*, was published already in 1844. Although daguerreotypes remained qualitatively more accurate than Talbot's calotypes, the combination of reproducing the visible with the possibility of making multiple prints from the original became important for various actors in the photographic business: Quantity became
important. In 1851, Frederick Scott Archer (1813–1857) described a wet-collodion process that produced inexpensive, high-quality negatives. Wet-plate processes were the dominant photographic media until invented dry-plate processes bit by bit replaced them, since they are easier to use and do not need as much technical knowledge. (Osterman, 2007)

The later history of reproduction includes inventions such as the halftone photomechanical reproduction process. The first printed photographs in a newspaper were published in the second half of the 19th century, and halftone printing led eventually to weekly photo magazines, daily newspapers with ever more images, and billboard advertisements in urban space. Xerography and digital photographic systems have widened the scope for reproductive processes even more, and today's digital photographs can be reproduced almost infinitely, making it possible to share almost as many copies of a picture as one pleases. As the representational sphere around us grows, it is important to underscore the uniformity of the multiple representations. In quite a few cases, the same images are reproduced over and over and over again.

_Transmitting the seen in space_

The reproductions of the seen today are spread out to various loci, such that the same image can be shown by different people in, for example, both Berlin and Vienna and this can be done simultaneously. The example-case photograph of the Sibelius monument can be accessed from anyplace where a digital device is able to connect to software showing the image, such as Panoramio or Google Earth (see Figure 12). Before the automation of transmission, images had to be apprehended at the place where they were located, or carried manually from their place of origin. This created a distinct symbiosis between images and their places, which is still seen in monumental buildings, many works of art, and religious imagery confined to religious sites. With the automation of transmission, images recorded at one place could be sent to other places via cables, radio waves, and various other means, without the beholder necessarily having to move away from the home. Today, image devices, such as newspapers, television, and computer technology, are brought to our private homes, fusing life in privacy with public information and increasingly (with the aid of novel ICT software) letting us transmit intimate matters publicly.
The automatic transmission of images relies on translations between the representational and non-representational (Thrift and French, 2002). Transmission systems used for transmitting images, such as a telegraph, the Bartlane cable picture transmission system, telephone lines, and TV systems, convert images into electrical signals that can be decoded to form images again at the other end. The same principle is applied with digital pictures, which are saved not as images but as binary data, which must be re-created with special software each time an image is looked at. Digitalized images exist thus in dual form, both as data set and as visible image. They are always part of a program, a network, that is used to show, process, and manipulate the images (Heidenreich, 2005). This principle makes it possible to manipulate pictures not only as pictures but as non-pictorial information, by adding noise or external information, changing metadata, or affecting the picture itself. Current digitally networked camera pictures rely ever more on the ability to be both: visible and invisible pictures. This facilitates reproduction, transmission, storage, and manipulation.

Current camera devices are extremely networked, in order to facilitate transmission, with camera-phones being especially good examples. Today, camera-phones have built-in wireless transmission capabilities such as Bluetooth, 3G, GPRS, infrared, GPS, and WLAN, as well as various wired plug-ins. The pictures taken with

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23 The beginnings of the history of automatic transmission of images can be read of through Batchen (2006).
the device can be shared with various applications via various channels, expanding lay use of transmitted images. Today, representations of the seen can be transmitted quickly to various parts of the world.

The possibility of transmitting images translocally has led to ever more places consisting of various information layers that can be accessed simultaneously (Ridell, 2009). The representational sphere in urban settings, for example, consists of local images in effigy, put up manually (such as unique urban sculptures and reproduced images on newspaper stands), of telepresent images shown on various telescreens (e.g., prerecorded and live content on ambient screens in shopping malls and on buses, or mobile photo messages sent to personal mobile phones) and of the unique melange of bodies interacting within these settings, which show images in corpore.

Converging the seen with other information

The synthetic nature of our sensory experience, integrating, for example, visual, auditory, and olfactory cues into a coherent whole, converges the seen with other kinds of information. Today camera pictures are also often combined with non-pictorial information, be it text, sound, or automated metadata. The dual form of digitized images, as data sets and visualized with the aid of algorithms as visible images, affords convergence of the seen with other information. The example photo published via Panoramio is a case in point: it shows, besides the actual photos, their location data, tags, comments by various users, a title for the image, and several usernames (see Figure 13). Additionally, it pinpoints the location of the photograph on an additional map that has been created with the aid of satellite imagery and pre-existing cartographic data. The integration of non-pictorial with pictorial information promises various future uses, in which the combination of different kinds of information provides new ways to answer possibly old questions. Imagine in the future combining family photographs of people with biological data, such as blood pressure and heart rate shown at the time of capture.
Images have long been complemented with other kinds of information, highlighting from a specific angle the media-theoretical statement that there are no pure media or that all media are mixed media (Mitchell, 2005a). Manual additions of non-pictorial information to camera-mediated pictures have a long history, but their automation can be seen as happening with printing techniques, in scientific measurements, and with the inclusion of sound alongside film as well as with the addition of metadata to photos.

Talbot’s *Pencil of Nature* included printed photographs and text, and, in 1854, André Disdéri (1819–1889) patented the *carté de visite*, a print format that usually included imprinted information, such as the name of the studio (McCauley, 2005). Later, various other formats were introduced, combining camera pictures and printed text.

William Cascoigne (1612–1644) had noticed already in 1640, thanks to a spider spinning its web inside his telescope, that anything placed in the focal plane of a telescope appears sharply alongside the object looked at. Various measurement scales could thus be inserted in the focal plane for looking through the telescope (Hetherington, 2003). Another inventive use of non-pictorial information came from Eadweard Muybridge (see Figure 14), who in 1878 built a device for multi-plate
chronophotography, using a row of separate cameras aimed toward a purpose-built aisle with precise markings on it. The photographic prints were mounted on cards containing further information and explanation of the markings (Rossell, 2005a).

Figure 14. A part of Eadweard Muybridge’s 1878 *Horse in Motion*, depicting his markings, a horse called Abe Edgington, and a driver named C. Marvin.

Though Cascoigne and Muybridge had successfully added metadata to camera-mediated images, it would not be until 1979 that the IPTC (International Press Telecommunications Council) defined the first set of metadata attributes. In 1988, the JPEG and MPEG standards were agreed upon, now very popular for sharing photos and videos in ICT environments. Current digital photos usually carry metadata in the aforementioned EXIF (exchangeable image file format), which has been around since 1997 (SAA, 2009).

Sound was added to camera-mediated images in 1901, with the synchronization of a phonograph with a cinematograph for easier projection. In 1911, Eugene Austin Lauste made the first experiments in talking films, which, after several technical improvements, became popular in the late 1920s (Roberts, Jarvis, and Peres, 2007).
Techniques and camera technologies

The purpose of recounting, through examples, short histories of specific desires for techniques is to show that they have a long history, and that the techniques applied are not confined to one particular pictorial medium. The desires for techniques, gaining artifactual form in mirrors, camerae obscurae, or Bluetooth transmissions, are recombined in the history of artifact use again and again. With our focus on the interconnection between the body and the artifacts it uses, the continuity in trying to find artifacts for specific desires is highlighted. Today’s networked cameras assemble a wide array of techniques into a single technology, a systematized arrangement of techniques, thus responding to various desires.

By talking about networked camera pictures and the desires for specific techniques motivating their creation in the first place, I want to turn attention to the interconnectedness of various techniques that make today’s non-professional photography – as well as other digitally networked camera use – possible. Thus photography, as conventionally defined (e.g., Osterman, 2007: 27), is in this view seen as part of a larger corpus of pictorial media that have been integral to the invention and development of various photographic devices, business models, images, and embodied interactions. Stressing the interconnectedness of images, bodies, and media emphasizes that camera pictures do not simply afford new kinds of uses but are also integrated into existing ways of doing, as well as with already existing image traditions. Throughout history, the desires for specific techniques have found various media that have been considered useful.

Paying specific attention to the desires for techniques found in digitally networked camera use aids in showing that current networked cameras were not destined to become what they did. As scholars in science and technology studies have been pointing out, we are not dealing with a technodeterministic history, nor with a great-man history, although various historical accounts of individual techniques and technologies, such as photography, seem to suggest otherwise (e.g., Pinch and Bijker, 1987; Bijker, Hughes, and Pinch, 1989; MacKenzie, 1999; Bijker, 2005). All inventors deal with various infrastructures and work in networks that enable and allow them to do their work of invention. In trying to find novel technical solutions to existing problems, or finding new problems that “need” solutions, several actors, in parallel, explore various innovations. The history of technological development similarly shows that various other factors than
engineering quality influence societal adoption of innovations, a famous textbook example being JVC’s Video Home System (VHS) being commercially favored above Sony’s technically superior Betamax system. In the adoption of specific material mediations, discourses and power relations matter.

By focusing on the brief histories of desires for techniques, I have underscored continuities in the use and creation of pictorial media. But there are obvious reasons that cameras are ever more digitally networked. What makes the role of ICT important in camera-mediated communication is that it allows acceleration of many processes related to automation, an increased scope and scale of information storage and usage, and assistance in giving ever more people access to communication channels. Additionally, because of the dual nature of camera pictures as digital data sets and visualizable images, ICT facilitates the convergence of various techniques, thus changing the ways in which bodies connect to media. Today’s use of digitally networked camera technology, such as mobile camera-phones in kindergartens, photo-sharing sites, or intervention in urban advertising campaigns, differs significantly from the ways in which people interacted with camera pictures in the 19th century.

The focus on techniques translated into material devices shows that digitally networked cameras recombine several technical inventions into specific camera technologies. Looking at the desires that go into current camera-mediation helps us to see the fluctuations in their use in the past and opens up new ways of thinking about their future role. They are and have been used in various cultural practices, as shown with the camera obscura. Thus pictorial media do not mediate our actions only in specific ways but can be used for quite varied purposes. The affordances provided by specific media have to be activated as part of particular practices.

The tracing of assembled techniques assists in finding a fundamental link between pictorial media and bodies using them. Desires for techniques provide a first assessment of artifactual experimentation done in order to overcome the constraints of our bodies. The desire to transmit the seen for others to see, for example, is thus to be understood similarly to the human desire to fly above the ground, which has led us to construct a wide variety of devices in order to actually do so. And although we can in hindsight see that these desires are concentrated at a specific time among specific people, as Batchen has shown with reference to the desire to fix images on a light-sensitive surface leading to the invention of photography as we know it, they are not necessarily unique to that
specific time and to specific people: the desire to fix the seen is found in Renaissance perspectival techniques just as it is part of high dynamic range (HDR) imaging in cell-phone cameras.
Asymmetrical orders of the visual

The desires for techniques as outlined so far need to be complemented with questions of societal control and subject positions. Pictorial media, used in exteriorizing actions of the body, have long been understood to be useful forms for control. Following the suggested understanding of bodies and material artifacts being assembled together as part of specific techniques, in which agents are “and do not merely ‘use’ the artefacts that connect them to social others,” assists in understanding why specific people at specific times have tried to secure access to devices that enable them to become specific kinds of agents.

The history of picture production is a history of specialist skills and asymmetrical communication relations. It is mainly designated professionals who have been painting images inside churches; publicly displaying sculptures of the ruling elites; or later been producing images for print, television, or billboards in urban spaces. This exclusivity is tied to the laborious process of making these images and the technical skills necessary for doing so but equally tied to representational politics of the ruling classes, who have always paid meticulous attention to their public image and have acted as censors between image producers and the public. Being able to order the visual sphere is a matter of power and agency.

Also today’s image use is restricted. Whom to depict, when, and where are highly regulated, as is the distribution of the photos taken. Companies, public organizations, and – increasingly - individuals focus on creating “proper” images for communication to the public and are very careful when granting usage rights for logos or pictures of people. And surveillance cameras, installed both in private and in public spaces, may be used by only those stakeholders having the right to do so.

Critical studies of contemporary visual culture show that the use of images is ordered, often in highly asymmetrical ways. Because of an unease with pictorial control and asymmetrical agencies, the increasing use of images has raised concern. The images that are shown to us in public, on the one hand, and images that are taken of us with various camera devices, on the other, are not in balance with regard to an ethics of mediated communication, especially from a user’s or citizen’s point of view. Larry Gross, John Stuart Katz, and Jay Ruby point out that
in the past quarter century, the world of mediated images has undergone transformations that have profound implications for the moral and ethical, as well as the legal and professional, dimensions of image-producing practices. Most notable is the emergence of widely accessible digital manipulation technologies, but the list also includes significant developments in the legal status of ownership rights over images and other forms of “intellectual property”; the worldwide, nearly instantaneous distribution of images via the Internet, [often] unfiltered by editorial professionals; the erosion of privacy under the onslaught of media sensationalism and competition for “live” images of celebrities or private citizens caught up in “newsworthy” events; and the spread of police (and media) surveillance cameras. (Gross, Katz, and Ruby, 2003: vii)

Gross, Katz, and Ruby point toward a plethora of problematics that have arisen with regard to present image use. The intellectual property of images distributed over a wide array of networks is anything but clear. Copyright and trademark law favors asymmetrical pictorial communication that does not acknowledge the idea that the right to free speech should also include a right to free pictorial communication, especially in societies in which pictorially mediated communication is becoming ever more prevalent. There are asymmetries in who can take and make pictures and in who is depicted, in the possibilities for distribution of images and in having access to the pictures that have been taken. Media sensationalism fosters erosion of privacy by focusing on especially emotional and intimate matters and distributing such content to wide audiences. And the increase in surveillance technologies changes the “whole picture.” Images, from this point of view, are playing an increasingly vital role in defining who we are, how we live, and what we do. Koskela’s (2003) suggestion that we are living in a “cam era” refers to an era in which visual representations captured with cameras play a significant role in our mediated social interactions. With the digitalization of cameras, we are increasingly living in a “networked era of cameras,” a time in which networked cameras connect us to an abundance of events, an abundance of space, an individualization of references, and the mediation of everyday communication (Augé, 1994).

This development is discussed in critical literature on visual culture in two main ways. 1) On the one hand, a mass medially connected economy of attention is certified,
which makes invisibility a trap. Following Markus Schroer (2005): the person who is unable to make himself visible, who is ignored by the glances of other people and the eye of the camera, can be seen as, to a certain extent, not existing in a mass media society. The private lives of politicians and celebrities are not investigated by only professional paparazzi, journalists, and casual citizens armed especially with mobile camera-phones: politicians and celebrities ever more often themselves offer glimpses of their private lives, in order to appear more approachable (in the case of politicians) or more interesting (in the case of celebrities). These practices are imitated and exploited further by laypersons, with less mass media coverage. This mass medially connected economy of attention has been termed by Mathiesen (1997) the “synopticon,” a metaphor I will apply to describe this specific asymmetrical order of the visual.

2) At the same time, analysis focuses on the various practices of camera-based surveillance, with, for example, surveillance cameras or signs reminding us that we are being surveilled. Here the metaphors of Bentham’s (1995) Panopticon, Orwell’s (1995) Big Brother, and the rise of a disciplinary (Foucault, 1991) and/or control society (Deleuze, 1993) are favored. Michel Foucault’s “visibility is a trap” (1991: 200 – emphasis added) is cited, to refer to an end of privacy and a fragmentation of the common public.24

In contrast to a wide variety of media-theoretical literature focusing on these visual orders, I claim that visuality cannot be explained via mere reference to these gaze constellations, although they remain important societal ways of ordering pictorial interaction, being pictorial practices themselves. As will be shown in the empirical case studies, people may take various subject positions in their pictorial interactions, and some have actively created strategies for interacting, with the aid of images employed against images, within panoptic and synoptic settings. My findings suggest that pictorial practices are more usefully described as heterogeneous, overlapping, and at times used to contest other pictorial practices. Looking more closely at the uses of digital camera technology may help make us aware of the plethora of ways in which people use images as part of their lives. The fundamental connection between bodies and pictorial media in this time of cameras becoming ever more available suggests that bodies will use cameras for various purposes.

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24 I’ve used the above duality with a similar wording before publishing this Ph.D. work in a joint conference paper in relation to visibility on social network sites. This connection will be explored closer in the subchapter on “Dealing with privacy in online picture sharing.” (Cf. Lehmuskallio, Tamminen, and
Nevertheless, a development has to be reckoned with in which our most intimate interactions may be turned into showrooms for a synoptic and panoptic duplex. On ever more social networking sites, for example, people maintain private, emotional relations with each other via a visual setting with targeted advertisements aimed at transforming our behavior, as well as a non-representational setting gathering as much information on our actions as possible. Here third parties try to find business opportunities in becoming indispensable mediators of our intimate emotional lives (Leistert and Röhle, 2011). In these examples, the synoptic and panoptic orders intersect, with attempts at heavy mediation of the ways in which we relate to each other, the ways in which we use computer technology to look each other in the eye.

For contextualizing non-professional uses of cameras as part of wider visual culture and pinpointing the ways in which material mediations in certain cases entail asymmetrical orders of the visual, it is important to outline the main arguments associated with the synopticon and the panopticon.
Thomas Mathiesen (1997) has described the “synopticon” as a gaze constellation in which the many see the few. The term is composed of the Greek words “syn,” referring to “together,” and “opticon,” a term related to vision and the visual. Mathiesen uses the synopticon concept to refer to a constellation wherein a large number of people share attention to the same issue: “It may be used to represent the situation where a large number focuses on something in common which is condensed” (ibid.: 219). The gaze constellation can be found inscribed in the architecture of the amphitheater, where an audience is arranged in order to look at a common stage, as well as in Greek temples, inhabited by cult statues, or churches, where the congregation is directed toward symbols of the Holy Trinity and the minister’s pulpit. These all have in common that the architectural design already suggests and affords specific ways of acting and thus orients the many to look at the few. In doing so, the design is a way of ordering the visual and directing mutual interaction and attention: it is part of a material mediation supporting this kind of looking relation.

The past 150–200 years have, according to Mathiesen, brought changes to the constellation described. Whereas earlier the many gathered at a specific location together with the few, be it the theater, temple, or church, the birth of the mass media meant that the few and the many did not have to share a common location anymore. Newspapers, cinema, radio, television, and most recently the Internet have made it possible to desituate the sender and the receiver of a communicational act from each other by technical means. The eye of the beholder does not meet the eye of the communicator anymore.

The mass media, according to Mathiesen, constitute a total system that has delocalized the audience from the senders and similarly isolated the members of the audience from each other. Whereas the old synoptic regime had the many gathering together at a specific place to look at the few, the mass media have maintained the overall architecture – the few looking at the many – while separating the audience members from the senders and from each other. This constellation still does, according to Mathiesen, control our consciousness in satisfying escapist needs.

My point is that synopticism, through the modern mass media in general and television in particular, first of all directs and controls or disciplines our consciousness. […] The paradigm is successful because
it is received in the context of a need – satisfies a need – for escape from the concrete misery of the world, very much like the Church which offered rescue and salvation in the hereafter. (ibid.: 230)

Here, Mathiesen echoes criticism that is familiar from a wide variety of commentators. Horkheimer and Adorno (2002) write about the detrimental effects of the “culture industry,” and, in line with Mathiesen’s point on synopticism, Hans Magnus Enzensberger (1963) directly calls it a “consciousness industry” (Bewusstseinsindustrie). Günther Anders (1980) writes about “iconomania,” humans’ need to live and reproduce themselves in pictures and, in so doing, fleeing from their inimitability. Pictures, used to idealize the world, conceal it. Guy Debord (1996) has underscored that relationships between people are ever more mediated via “spectacle” and that nothing outside spectacular relations can be seen as real anymore. Only mediation via spectacle would create reality. And Paul Virilio (1993; 1999) again talks about “indirect light,” which first must create our mediated parallel reality. In contrast to natural or artificial direct light, that is used in order to light something up, indirect light is explicitly used in order to create image worlds to be seen, into which we can enter via a tele-presence from afar.

These positions all have in common that they value mediated imageries negatively, ascribing agency to images and media whereas subjects, the beholders, remain patients, without agency. The critique of pictures is, when looked at more closely, mainly a critique of a capitalist culture industry and the pictorial worlds created within it. These worlds are deemed to alienate the individual from his social networks and the possibility of living a life worthy of a human. (Belting, 2005a)

Taken to its extremes, the many looking at the few, who are shown in images in effigy, instead of appearing in corpore in front of the many, can be exemplified by the architectural construction of the “panorama,” which Robert Barker patented in 1787 (Kammerer, 2008: 114; Barker, 1999). The idea of the panorama is that its viewer enters a, preferably cylindrical, building that is lit by natural light from above but has a shade or roof preventing the viewer from seeing where exactly the walls end (see Figure 15). What the viewer thereby will get to see is a drawn or painted image that presents “an entire view of any country or situation, as it appears to an observer turning quite round” (Barker, 1999). He has to have a fixed viewing position, in line with the tradition of Cartesian perspectivalism (Jay, 1988), in order not to notice the “trompe l’oeil” – literally, “the misguided eye”:
There must be an inclosure within the said circular building or framing, which shall prevent an observer going too near the drawing or painting, so as it may, from all parts it can be viewed, have its proper effect. (Barker, 1999)

In the patent, Barker calls his invention *La Nature à Coup d’Œil*, “the nature with a glance.” Its use is thought to be an immersive experience wherein the viewer is directly confronted with an artificial image and cannot escape it, being drawn inside the image. In this architectural construction, a fixed viewer is imagined to experience the illusion of a view opening up in front of him, instead of recognizing the walls that actually contain him, just as Alberti suggested with the metaphor of the “open window” (*aperta finestra*) framing perspectival Renaissance paintings (Friedberg, 2009). The painters of the images, as well as the construction workers realizing the architecture, are long gone when the viewer enters the room that misguides the eye. Reality becomes the image, or the image becomes reality, even though neither panoramic images nor perspectival Renaissance paintings have to be realist but may depict the invisible, or historical stories and myths.

In classic media criticism but also, for example, in newer virtual environment research (e.g., Sheridan, 2000: 5–6), the panoramic principle has meant not only that the viewer is unable to distinguish between the images shown inside a panorama and a “real
world” but that viewers are indoctrinated by what panoramic arrangements suggest. Horkheimer and Adorno write this of the techniques of the culture industry:

The familiar experience of the moviegoer, who perceives the street outside as a continuation of the film he has just left, because the film seeks strictly to reproduce the world of everyday perception, has become the guideline of production. The more densely and completely its techniques duplicate empirical objects, the more easily it creates the illusion that the world outside is a seamless extension of the one which has been revealed in the cinema. (Horkheimer and Adorno, 2002: 99)

And this makes it possible, according to them, to explain the victory of the culture industry, since “[i]ts victory is twofold: what is destroyed as truth outside its sphere can be reproduced indefinitely within it as lies” (2002: 107). The viewer is immersed in the panorama and forced to believe what the culture industry suggests. In its most extreme elaboration, Baudrillard (1994) has argued that we currently live in a world of a precession of simulacra, where signs no longer refer to their assumed real referents but only to themselves, and this has made it impossible to be in contact with the “real.” In these theories, specific images have agency over bodies that remain temporary “patients,” unable to regulate their boundaries and their being overwhelmed.25

Mathiesen’s synopticon and the panoramic principle both continue a line of thought that, on one hand, is especially critical of contemporary camera images and, at the same time, abducts this criticism to (almost) everything around us. Recipients are described as passive bodies who mainly follow suggested governmental and economic strategies. The suggested subject position is one in which external images and techniques are overwhelmingly successful.

Additionally, Mathiesen claims that mass mediation would have in the last 200 years separated the senders from the receivers, whereas the history of artifacts and mediated communication shows that even early on the necessity of being in the same place at the same time had diminished, creating a major advantage for mediation of communication in the first place. Pyramids and statues are only two examples of mediated communication that are not bound to a viewer needing to be present at the time and in the location in which the original communication act was set. Many
pyramids and statues have remained much longer among us than the bodies that created them in the beginning. But also spatial constraints of mediated communication were resolved early on with elements such as parchment, which can be carried from one place to another without the message conveyed suffering thereby (cf. Debray, 2003).

Already these examples show that the birth of mass media mainly changed the scope of and access to mediated communication by enabling its more effortless distribution via mechanical automation, such as with the invention of the printing press. After the latter invention, more people had access to books, such as the Bible, because copying their content became faster and this had made it possible to scale up the production of books while at the same time lowering the costs for their purchase. In order to secure revenues for original work, creators and (especially) distributors started to call for copyrights, which inhibited relatively free and flexible use of cultural material once it has been created, as known from, for example, folk songs and tales. (Thompson, 1995)

So what is problematic with the synopticon as it has been outlined above, is that it is an authoritative account of “the whole situation,” comparable to scientists presenting the current state of science, politicians explaining the history of a nation, or architecture filling a viewer with reverence (Latour, 2005b: 186–187). Fittingly, Latour uses the word “panorama” to describe these kinds of narrations:

The Greek word pan, which means “everything”, does not signify that those pictures survey “the whole” but that, on the contrary, they paper over a wall in a blind room on which a completely coherent scenery is being projected on a 360° circular screen. Full coherence is their forte – and their main frailty. (ibid.: 187)

Instead of downplaying the importance of panoramic descriptions, by maintaining them to be only simplified and stereotypical accounts of much more complex affairs, Latour proposes to use panoramas, like the synopticon, as a way to orient our questions for closer investigation. The status of these panoramas is strangely ambiguous: they are simultaneously what vaccinates against totalization – since they are obviously local and

\[25\] For elaboration on agent/patient relations, see Gell (1998). His model is useful since it, in contrast to many other models, allows for contextual agent/patient relations that may be especially layered. For a recent application of the model, see Lehmuskallio (2011a).
constrained to within closed rooms – and what offers a foretaste for the one world to be lived in. (ibid.: 189)26

I therefore use the synopticon as a metaphor for mediated looking relations in which the many direct their attention via pictorial media towards the few and the few have the power to decide what it is that they want to show: be it images of people, landscapes or supernatural beings. Overwhelming constructions, such as virtual environments, the panorama patented by Barker in 1787 as *La Nature à Coup d’Œil*, and the *Chambre du Cerf* completed in 1343 in the papal palace in Avignon (Grau, 2003: 33–37) provide examples of synoptic looking relations but so too do outdoor billboard advertisements, stages filled with performers in pop concerts, and popular television shows shown on millions of screens.

Here we deal often with relations of agency wherein a recipient is deemed to be rather passive when compared to images and media ascribed with agency, although researchers have started to point towards creative readings and appropriations of media content (Hall, 1999; Hepp, 1998). Additionally, when considering Mathiesen’s account from a panoramic perspective, we discover that synoptic narrations are easily totalizing accounts, as exemplified by the criticism of images that is, in fact, criticism of consumer capitalism and the culture industry.

Despite its shortcomings due to over-generalizations, the synopticon is useful for specific looking relations, as well as in helping one find the space for first answers to the question of how digitally networked cameras mediate our actions. The synoptic principle can be found in “spectacular relations,” such as in following a play in an amphitheater, participating in coronation celebrations or public media rituals, reading magazines, and watching television. The claimed effects are a synthesis between the “real” and what is presented in synoptic constellations; a direction and control of one’s consciousness by the synoptic media and their content; and a presentation of unreachable prototypes in the form of celebrities, digitally enhanced photographs, and the like. In this gaze constellation, the many see the few. It is asymmetrical and non-reciprocal; the original communicators do not react directly to viewers’ comments, especially in view of the mass mediation of synoptical relations. Co-present viewing has developed into individualized viewing. The societal focus involves an attention economy (Goldhaber,

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26 Latour’s use of the concept of panorama closely approaches Walter Lippmann’s (1998) discussion of stereotypes, which he sees as, on the one hand, deficient and biased yet, on the other, a necessary means for efficient information processing, thus not being something intrinsically good or bad.
1997; Franck, 1999), where “invisibility is a trap.” The emancipation from not being included in the synoptic principle is propagated via the “right to be included,” the right to be among those represented in synoptic settings.

One current example of a synoptic principle at work is the growing number of people who mold their bodies according to ideals presented via synoptic settings, in which attention and mutual focus are directed towards synoptic images. Mauss (1973: 72), in his discussion of techniques of the body, recounts how nurses in a hospital in New York and women he saw in Paris walked in a similar manner because they had seen the same gait in cinema, a classic synoptic setting. Here, specific images shown in mass media have agency over bodies, and the bodies again serve as media for re-creating these kinds of images. Further cases in point are young people imitating the “porn-chic” look seen in mass media (Siibak, 2007) and also the application of cosmetic plastic surgery, including abdominoplasty, breast augmentations, and rhytidectomy, or, as they are termed in the yellow press, the “tummy tuck,” “boob job,” and “facelift.” These are only a few examples of methods used to mold one’s body in order to give an appearance that has been propagated via mass media as beautiful and seductive. This re-creation of specific kinds of images as techniques of the body is what Mauss calls “social idiosyncrasies” (1973: 72), shared ways of using one’s body. Translocal social idiosyncrasies are often learned via synoptic settings.
Returning to the photo-sharing example from the previous section, we find that here, in the material mediation, the synoptic principle intersects (Lutz and Collins, 1993) with other ways of using images (see Figure 16). Ever more photo-sharing and archival services display targeted advertisements besides the pictures shared, in textual, visual, or aural form. Photo-sharing sites thus interweave a synoptic gaze with materially mediated pictorial interaction. The intention behind these advertisements is “to transform the way people think, feel and ultimately behave,” as a major advertising agency, the Leo Burnett Group, puts it on the company Web site.27 If these efforts are successful, the synoptic setting is used to suggest translocal social idiosyncrasies, specific techniques of the body that create revenue for advertisers. At times, even the immaterial property rights to all user-created content shared via an online service are claimed by service providers, as formerly done with, for example, Facebook, turning non-professional communication itself into a commodity business (Andrejevic, 2011).

27 See http://www.leoburnett.com/ (last accessed on September 1, 2011).
The panopticon

Mathiesen describes the synopticon as complementary to Foucault’s notion of the panopticon, and “they together, precisely together, serve decisive control functions in modern society” (Mathiesen, 1997: 219). The complementary visual constellation ordered by a synoptic and a panoptic principle is what Mathiesen calls a viewer society. It is through the viewer society that bodies are created “who control themselves through self-control” (ibid.: 230).

In his book *Discipline and Punish*, Foucault introduces Jeremy Bentham’s idea of the Panopticon and uses it in order to point toward a societal shift in the internalization of control. Whereas the age of Antiquity was, according to Foucault, one of spectacle, of pure community, already the middle of the 19th century was an “exact reverse of the spectacle” (Foucault, 1991: 216), bearing evidence of the rise of a disciplinary society. Foucault makes his point with two examples: First, he tells the story of the execution in 1757 of Robert-François Damiens, who had tried to kill Louis XV, the king of France. The execution was very brutal, ending with Damien’s limbs being torn off by horses. Also it was a public event, attracting many viewers. Second, Foucault lists Léon Faucher’s reforms for prisons published in 1838, focusing on the rules for young prisoners in Paris. Faucher had presented a timetable organizing the day-to-day life of the convicted. The convicts’ expected behavior is prescribed in minute detail, consisting of rules on how to rise in the morning, how to go to work, etc., with exact times for each action. These examples are introduced to show that the public spectacle of torture has disappeared; instead, convicts are trained to control their bodily behavior and the punishment focuses on transformation of the soul (Foucault, 1991; Mathiesen, 1997).

Foucault, while focusing on changes in the penal process, and the visibility of it, generalizes from these observations and studies changes in the technology of power (Foucault, 1991: 23). Punishments are not public spectacles anymore.28 They are hidden from the public’s view via discipline:

> “Discipline” may be identified neither with an institution nor with an apparatus; it is a type of power, a modality for its exercise, comprising a whole set of instruments, techniques, procedures, levels of

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28 As will be argued with reference to Mathiesen’s viewer society later, both panoptic and synoptic constellations are porous and have evolved in interaction. Some punishments, such as for example Saddam Hussein’s hanging, have been made visible for the many.
application, targets; it is a “physics” or an “anatomy” of power, a technology. (ibid.: 215)

The metaphor Foucault uses to visualize and clarify the process is an architectural idea promoted by Jeremy Bentham in 1786 as the Panopticon. It is a technocratic solution that Bentham tried to sell to many spheres of society, among them “reformatories, factories, workhouses, poorhouses, military hospitals, manufactories, hospitals, asylums, and schools” (Kammerer, 2008: 111 – my translation). The benefits that Bentham claimed for his invention are manifold and possibly as well a reason for his difficulty in actually selling the idea. Bentham advertised the idea by claiming that the panoptic principle would be a cure for various societal problems:

- Morals reformed – health preserved – industry invigorated – instruction diffused – public burthens lightened – Economy seated, as it were, upon a rock – the gordian knot of the Poor-Laws are not cut, but untied – all by a simple idea in Architecture! (Bentham, 1995: 31; Foucault, 1991: 207)

![Figure 17. A model of Jeremy Bentham's Panopticon.](image)

The architecture itself bears similarities with Barker’s panorama, with the difference being that here the viewer is not inside a circular tower and looking at a wall decorated
with images. The viewer instead is looking at those to be monitored, who are arranged in circular formation around the tower in which the viewer is located (see Figure 17).

We know the principle on which it was based: at the periphery, an annular building; at the centre, a tower; this tower is pierced with wide windows that open onto the inner side of the ring; the peripheric building is divided into cells, each of which extends the whole width of the building; they have two windows, one on the inside, corresponding to the windows of the tower; the other, on the outside, allows the light to cross the cell from one end to the other (Foucault, 1991: 200).

The overseer is placed in the central tower and those to be overseen around it. Whereas those to be overseen are placed in individual cells and are constantly visible if looked at, the overseer cannot be seen by the ones observed. In this constellation, “visibility is a trap” and “invisibility is a guarantee of order” (ibid.: 200). The visual order is very different from that of synopticism or the spectacle previously involved in punishment – the gazes connecting bodies and media are of a different kind. Before the panoptic principle for disciplining the self, according to Foucault, penal processes relied on public executions and the incarceration of those not fulfilling societal norms. The norm-breakers (robbers, murderers, witches, etc.) were, accordingly, invisible to the public while incarcerated and extremely visible when punished. The old disciplinary regime is called by Foucault “discipline-blockade,” while the emerging disciplinary order is termed the “discipline-mechanism” (ibid.: 209).

[A] functional mechanism that must improve the exercise of power by making it lighter, more rapid, more effective, a design of subtle coercion for a society to come. The movement from one project to the other, from a schema of exceptional discipline to one of a generalized surveillance, rests on a historical transformation: the gradual extension of the mechanisms of discipline throughout the seventeenth and eighteenth centuries, their spread throughout the whole social body, the formation of what might be called in general the disciplinary society. (ibid.: 209)

The technology of power that emerged with the discipline-mechanism is not to be understood as mainly repressive; it facilitated a wide array of means that helped institutions such as the military to exist in the first place (ibid.: 23, 210). This is what
Foucault calls the functional inversion of disciplines (ibid.: 210). The mechanisms of discipline were not only tied to specific penal processes but became de-institutionalized and were applied to a great many spheres of society. Taken one by one, they have a long history, but in the eighteenth century they “crossed the ‘technological’ threshold” (ibid.: 224). Additionally, the state arose as an important player in taking up disciplinary mechanisms and so promulgated the panoptic principle.

The panoptic principle has attracted many academics to the study of surveillance systems with Foucault’s idea of the rise of a disciplinary society. New technological inventions such as digital electronic devices, as well as new areas of data-gathering and information-processing, have led theoreticians to modify Foucault's use of the panopticon concept slightly. For example, Matthew Allen (1994) speaks of a “polyopticon,” Mark Poster (1990) of the “superpanopticon,” and Mann et al. (2003) of a “neo-panopticon,” and various other concepts have emerged.

The primary reason for these modifications is the rise of digital information and communication technologies, which, in these authors’ view, transform the viability of Foucault’s metaphorical use of the panopticon, be it because of new architectural solutions or those surveilled contributing to the collection of their own surveillance data with user-generated content, as done on many social networking and photo-sharing sites. For example, Google’s Gmail service has a FAQ section that explains some of the panoptic elements at work in delivery of the service (which apply for many other services as well):

[A]utomatic scanning and filtering technology is at the heart of Gmail. Gmail scans and processes all messages using fully automated systems in order to do useful and innovative stuff like filter spam, detect viruses and malware, show relevant ads, and develop and deliver new features across your Google experience.29

The panoptic principle is at work not only for providing a seamless user experience but also for companies’ use to target their advertisements, or government officials asking for user information. Figure 18 shows the picture discussed on Google Panoramio, which does not show what kind of information precisely is collected. User-created content on many photo-sharing sites is exposed to the panoptic principle, but this exposure remains

29 See http://mail.google.com/support/bin/answer.py?hl=en&answer=1304609 (last accessed on October 15, 2011).
– in line with the panoptic principle – non-representational, afforded by the dual character of digital pictures as both representational and non-representational. We cannot see those collecting the data describing our behavior while we create and share pictorial content. Google, whose privacy violations led to the U.S. Federal Trade Commission subjecting it to independent privacy audits that are to continue for the next 20 years, has developed a transparency principle according to which it shares some of the information on requests made, via an interactive map of government requests.  

Google states the following:

Like other technology and communications companies, Google regularly receives requests from government agencies and courts around the world to remove content from our services and hand over user data. Our Government Requests tool discloses the number of requests we receive from each government in six-month reporting periods with certain limitations.

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Figure 18. The panoptic principle at work. When creating and sharing content, users usually do not know what kind of information is collected, at what times.

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31 See http://www.google.com/transparencyreport/governmentrequests/ (last accessed on October 15, 2011).
Kevin Haggerty has counted 15 neologisms ending with “-opticon” and suggests to “tear down the walls of the panopticon” (Haggerty, 2006). And Dietmar Kammerer writes the following:

The recent “successful track record” of the Panopticon is especially astonishing when one considers how the principles of a centralist power architecture of the 18th century have been applied to the non-central network circumstances at the end of the 20th century. The scientific community has since 1990 downright blindly rushed to the Foucauldian concept and used it widely without further reflection for very disparate institutions and areas of life. Cyberspace or shopping centers, television shows, or human resource management: all were manifested as versions of Bentham’s invention. The success has overtly strained the concept. (Kammerer, 2008: 127 – my translation)

Kammerer in his critique – but equally authors of neologisms ending with a new “opticon” – seem to overlook that Foucault used the panopticon as a metaphor for a discipline mechanism that is not bound to one institutional setting or a specific architecture such as Bentham’s invention. The metaphor is an attempt to capture the mechanisms with which the few can appear to see the many, if they want to do so, regardless of whether this is electronically or digitally mediated or not. Digital mediation enables novel ways of doing so, but it does not change the motivations behind a specific mechanism ordering situational visuality. The desire for a technique to oversee the many is not bound to one medium.

Visuality is ordered differently for certain participants in this disciplinary mechanism, depending on their societal function as observers or observees. As Kammerer notes, the essence of the panoptic principle is the “apparent omnipresence of the inspector […] combined with the extreme facility of his real presence” (ibid.: 120, citing Bentham – emphasis in the original; cf. Bentham, 1995: 45).

This mechanism, as stated above, is not constrained to one specific technical solution or one medium; indeed, it can be seen to be in use in digital electronic environments as well, such as in the interpellation as consuming subject via consumer profiling, or as criminal via forensic profiling. The digital traces left by the use of many digital services are interweaving a panoptic gaze into non-professional pictorial practices. In employing the panoptic gaze, the few are able to see the many, if they choose to do
so, but the many might never know that they have been looked at, in consequence of the panoptic looking relations.

The hierarchical observation is thus coupled with an internalization of control of those observed. The observed, in this model, strive to normalize their behavior, according to norms that are suggested in social interaction, and as Mathiesen shows, including via synoptic settings. The disciplinary mechanism, introduced as a specific gaze constellation, is internalized with techniques of the self, creating bodies that show, as Goffman maintains, *images* “of self delineated in terms of approved social attributes.” The image *in corpore*, shown to others, is similarly an internalized image of how to behave correctly in a specific situation.

The few are nevertheless only apparently omnipresent, since continuous presence is not feasible. This gives leeway for various countermeasures that are used to escape or question a panoptic gaze, such as pointing out the surveillance cameras directed at public spaces (see Figure 19). This information can be used to create alternative routes in a town, in order not to be recorded, or to try to find ways to regulate the use of camera devices.

![Figure 19](image-url)

Figure 19. Surveillance cameras in 1998 denoted by red dots in New York's Community District 1 by the NYC Surveillance Camera Project. This figure is part of a larger map of surveillance cameras in New York.
The NYC Surveillance Camera Project is an example of raising public awareness of the panoptic gaze and problematizing the ubiquitous use of cameras recording public space. In 1998, the participants in the project found out that, of the 2,397 cameras they were able to find in Manhattan directed toward public spaces, fewer than 300 were installed by public authorities. Approximately 2,100 cameras were used by private companies and individuals. The project thus makes an important observation for New York regarding the camera-mediation of everyday life, and what it found might be a more general pattern in the distribution of cameras elsewhere as well: “It is more likely that a private company, your employer, your landlord, your coworker or just about anyone who wants to install a camera, is watching you” (NYC Surveillance Camera Project, 1998).

Without detailing the project participants’ specific ideas of how to deal with the increase in surveillance cameras, we can see that what is important here is that the members are inspired by Foucault's discussion of the panoptic gaze and have found an interesting way of creating awareness of it. They are a case in point that a panoptic gaze does not numb citizens into becoming merely observing bodies, only disciplining the self, and that the panopticon can be used as a fruitful figure to think with.

Metaphors such as the synopticon and panopticon are useful since they orient our thinking toward ways of understanding the world that combine existing knowledge with something new. In the history of social sciences, societal interaction has quite often been explained with the aid of technical devices. “Panorama,” “panopticon,” and “network” are obvious examples, but also very common concepts such as “stereotype” referred originally to technical devices that later served as a “blueprint” for understanding social relations. For example, for the stereotype,

[a] stereotype is a plate constructed by making a mold of a printing surface and from that a cast in metal type. The stereotype enabled a newspaper to reproduce quickly and inexpensively many copies of a message. (Lasorsa, 2008)

Instead of fighting against metaphors per se, one should see them as images to think with. John Urry wants, for example, “to develop through appropriate metaphors a sociology which focuses upon movement, mobility and contingent ordering, rather than upon stasis, structure and social order” (Urry, 2000: 18). He cites Rorty, who claims, “It is pictures rather than propositions, metaphors rather than statements, which determine most of our philosophical convictions” (ibid.: 26, citing Rorty). Mitchell (1994) has
taken an active look at the metaphors and pictures that are used in doing theory, showing how verbal and visual modalities intertwine. With this stance, it seems to be of less importance that the Panopticon was never built as intended (Kammerer, 2008: 122–124), since Foucault’s claim was never meant to suggest that we would live in a panopticon, if the word is taken to mean a specific architecture. The panopticon is instead to be understood as a metaphor for a specific visual order, which structures looking relations between observers and observees. The panoptic gaze, just as the synopticon, is an ordering apparatus in social interactions, one that relies on techniques that have to be maintained. Counter-actions such as those of the NYC Surveillance Camera Project question the putative relations of agency invested in when visual devices are being implemented in the first place. The project’s participants underscore their agency quite clearly by stating the following:

Video surveillance cameras have arrived on the streets of New York City. But it is up to us to decide if they are here to stay, and if they are, then under what conditions. (NYC Surveillance Camera Project, 1998)

In summary, the panoptic principle describes a gaze constellation that we can find in the view of God overseeing the congregation, confession in the Roman Catholic Church, Bentham’s architectural idea, surveillance cameras in public spaces, body-scanners at airports and radio-frequency identification (RFID) tags attached to nametags of those moving about at company headquarters, to name just a few examples. Here the inspector is apparently omnipresent and easily can become actually present, if necessary.

The panopticon’s claimed effects are the transformation of the soul and the discipline of the self. When we know that we are watched, our behavior takes up “face” (Goffman, 2005), a shared morality shown to others with the aid of our bodies. What is disciplined, as with Faucher’s timetable, Bentham’s Panopticon, or surveillance cameras in public spaces, is visible behavior. After public executions were forbidden throughout Europe, the body did not cease to be an object of attention. Discipline is used in producing “docile bodies,” bodies that are transformable with the assistance of specific techniques:

What was then being formed was a policy of coercions that act upon the body, a calculated manipulation of its elements, its gestures, its behaviour. The human body was entering a machinery of power that

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32 Although a Wikipedia article on “Panopticon” claims that it has actually been built, in India.
explores it, breaks it down and rearranges it. A “political anatomy”, which was also a “mechanics of power”, was being born; it defined how one may have a hold over others’ bodies, not only so that they may do what one wishes, but so that they may operate as one wishes, with the techniques, the speed and the efficiency that one determines. (Foucault, 1991: 138)

Foucault’s insistence on a policy of coercions that act upon a body is important in our discussion of specific visual orders and their technical mediations, since in both synoptic and panoptic settings the body is targeted with specific means in order to mold it toward predetermined goals. This is not done with one visual device but with the aid of an entire apparatus, which has to be maintained (Foucault, 1978; Agamben, 2009).

The gaze constellation of the panoptic principle is not reciprocal; the few are able to see the many without the many being able to recognize the few, as when the state watches its citizens, private companies watch consumers, or property-owners try to detect trespassers. The more visible citizens are, the more trapped they seem to be, whereas the invisibility of those who watch is a guarantee of order. The viewing is not co-present: the eye of the beholder never meets the eyes of the persons who are overseen – the gaze and the eye are separated. The societal focus is one of a disciplinary or a control society, wherein the individual is examined and reassembled via self-control. Emancipation from this appearance of overall vigilance can be gained via the “right to be let alone” (Warren and Brandeis, 1890), as many liberal privacy advocates maintain (e.g., Rössler, 2001).
A viewer society?

At first sight, the divide into the synopticon and the panopticon seems to explain how our visual surroundings are ordered, as well as how this ordering affects everyday citizens. Television series, music videos, and movies show us a wide variety of celebrities, who remain unattainable prototypes, and ever more societal actors, ranging from companies to religious organizations and political candidates, use advertisement imagery in attempts to transform the behavior of those encountering the images. When using social networking sites and photo-sharing services, we are targeted with various advertisements. At the same time, more and more societal actors have started to use camera devices for surveilling their homes, stores, offices, and children in order to protect what is deemed valuable and in so doing care for it, and our digitally networked camera use can be traced by cellular phone service operators, software providers, and government agencies. Mathiesen calls this constellation the “viewer society” and maintains that the panopticism and synopticism, instead of being two strictly separate processes, have developed and evolved in close interaction. A case in point is mass media stories of robberies, murders, terrorist attacks, and extremely violent beatings, which are presented in minute detail and thus turned into spectacle. The stories, by contributing to a culture of fear, are used for demanding and gaining ever more funds for panoptic surveillance systems, which gather ever more fine-grained data about citizens.

The concept of the viewer society highlights a repressive double bind related to citizens’ visibility. On the one hand, they are invisible in the mass media, which are reserved to the few, but highly visible for state surveillance, which try to govern the citizens by knowing ever more about them.

Peter Bräunlein stresses that in these kinds of theorizations images are often regarded as a menace: “Disclosing their concealed power is part of the program of emancipatory science. The weapon against the image is the word” (Bräunlein, 2004: 201 – my translation). For instance, Neil Postman argues in his discussion of the assumed lack of rationality in images, especially photographs, that

language, of course, is the medium we use to challenge, dispute, and cross-examine what comes into view, what is on the surface. [...] The photograph itself makes no arguable propositions, makes no extended
and unambiguous commentary. It offers no assertions to refute, so it is not refutable. (Postman, 1986: 73 – emphasis added)

Postman’s view, which is built around Boorstin’s and Sontag’s writings and is still very common, is questionable. For Postman and many others, pictures are not approached as means of communication that should be questioned and debated in a similar vein to the printed word. Instead of actual study of the informational content of pictures, exploration of their uses, and possibly asking for new pictorial modes and looking relations to replace existing ones, there are disputable “facts” put forth about the nature of images, especially in comparison to text.

In contrast to a general critique of images for their use in asymmetrical orders of the visual, I maintain that the organization of visuality cannot be explained only or mainly by referring to this discourse. Pictorial practices are rather heterogeneous and at times intersect, with some ways of using images being backed up by a complex apparatus, while others are more loosely organized and possibly likely to remain ephemeral ways of ordering the visual.

The use of images in general, and camera pictures in particular, is more usefully understood from a perspective that takes our interactions with images into account, focusing on the ways in which people actually use pictures for various purposes. We need empirical studies of the ways in which social actors interact with cameras and with camera pictures in a variety of situations. Specific looking constellations, such as that of the synopticon and the panopticon, are useful as figures to think with in discussion of the networked “cam era,” but they should not be over-generalized. Our embodied looks, mediated via pictorial media, take various forms.

With these discourses borne in mind, it is important to study empirically how people actually use digitally networked cameras in various settings and how, if at all, the material mediations have agency in our actions, influencing the ways in which we are able to do things.

33 For discussion of the importance of care for those to be surveilled as an impetus for surveillance, see, for example, the work of Essén (2008).
In focusing on pictorial practices, and in these on the body as the first location of images, this study's theoretical framework stresses the interconnection between bodies and pictorial media, which are situationally assembled in order to act. We use techniques of the body in acting, and these techniques can be extended and distributed to pictorial media.

Already in everyday face-to-face interaction, we turn our bodies into images in order to act meaningfully, and these images make sense only when someone sees them. The images on bodies, images *in corpore*, have long been supplemented with images in effigy, created on external media. The techniques for creating images in effigy have taken various forms through history and are currently recombined in many ways. In focusing the brief history of converged techniques on techniques of the body extended to pictorial media, I have shown various techniques that are used in exteriorizing embodied actions, as well as providing us with novel means to distribute our actions. These techniques, such as the techniques to represent the seen or to transmit the seen in space, have their individual long histories, but, because of the digitalization of camera technology, these take various forms, with a scope unprecedented in human history. Especially important for making these novel recombinations is the possibility to automate representing the seen, transmitting the seen in space, and converging the seen with other information. In networked environments, images in effigy rely ever more on various forms of automation.

Pictorial media are at times used asymmetrically, and, as discussed in “Asymmetrical orders of the visual,” some critical voices in visual culture studies argue that both the images shown to us and those taken of us are used to discipline and control our behavior.

From this point of view, it seems quite understandable that there is and has long been a search for ways out of repressive but productive visual orders. Panopticism and
synopticism are seen as ways of controlling self-realization and alternative ways of living, from which subjects should be liberated.

Increasing use of “alternative” media and self-made content is therefore seen by many critical authors as a way out of constraining visual orders. A good example of the promise that ICTs and user-generated pictorial content have awakened can be read in a recent report titled *Video Republic*, in which Chenal and Laitio (2008: 8) emphatically state, “The researchers in this report argue that we need to provide more people with the tools and skills to express themselves,” implicitly suggesting that “people” would not yet know how to do this without help from above and new ICTs.

The claim of an emancipatory and transforming potential of digital camera technology is found in a wide array of related studies of non-professional networked camera use. As one goes through the empirical literature on digital camera use, focusing on the uses of mobile camera-phones, webcams, photo-sharing, and social networking sites, a common implication underscores the transformative effects on image use due to the devices used (e.g., Okabe and Ito, 2003; Van House, 2006; Villi, 2010). In these studies, a rupture between film-based non-professional photography and the usage of novel camera devices is attested to, and a paper titled “Camera Phones Changing the Definition of Picture-worthy” (Okabe and Ito, 2003) provides a special case in point. Here, networked cameras are seen as changing what is worth taking a picture of, or camera pictures are seen as mediating presence in novel, unforeseen ways. The pictorial media used are in these studies credited with special agency, claimed to transform the ways in which bodies relate to images.

In the context of our “camera era,” wherein surveillance systems as well as tele-presented screens seem to be ubiquitous, and panoptic and synoptic constellations abound, making oneself visible by using networked cameras is seen to be a way to “reclaim the copyright” (Koskela, 2004: 206) on one’s own life. As Koskela puts forward, “In contrast of being targets of the ever-increasing surveillance, people seek to play an active role in the endless production of visual representations” (ibid.: 206). Here showing oneself in images in effigy is considered to have specific agency. Koskela grounds her analysis in a reading of Jennifer Rigley's JenniCAM use, a networked camera system that Rigley installed in 1996 in her college dormitory room and later expanded into a commercial service. The system utilized a Connectix QuickCam filming Rigley's everyday life at home, initially taking black-and-white pictures every three
minutes, with the images sent to a server and shown on a dedicated Web site. Rigley became a public figure herself, and various analyses have been written of her and her webcam use. For Koskela, Rigley was, by making herself visible, able to control the kinds of representations made of her and thus narrate her own presentations of self.

The suggestions in these discourses underscoring a transformative agency of networked cameras and/or pictures taken with them usually either are based on theoretical discussions informed by the arguments presented under “Asymmetrical orders of the visual,” suggesting emancipatory potential in non-professional uses of camera technology, or are based on small-scale qualitative empirical studies, especially of networked camera use, with findings suggesting that the devices themselves affect picturing practices, transforming our relations to cameras.

What remains unclear in these discussions are a closer look at the ways in which networked cameras mediate our actions, and how networked cameras are empirically used as part of wider visual cultures. There is still lack of empirical research into how people live their everyday lives with and around networked camera pictures when contributing themselves to an increasing flow of pictures (cf. Chalfen, 2008). This is why this study turns its focus now to the social practices that networked cameras partake in. Grounded studies of ways in which social actors interact with cameras are presented, aiding us in examining assumptions made about networked camera use. (Cf. Ginsburg, Abu-Lughod, and Larkin, 2002)

34 The original site could be found at http://www.jennicam.org/. For an example of online documentation of the project, see http://www.arttech.ab.ca/pbrown/jenni/jenni.html (last accessed on October 15, 2011).
In order to study how networked cameras are used non-professionally as they become ever more available, I will focus on four empirical case studies in the discussion below. On account of the huge number of camera pictures available today, a heuristic approach is applied in the choice of these empirical case studies. The studies selected are helpful in highlighting different aspects of networked camera use, showing, on the one hand, specific ways of using cameras while at the same time helping us to work out important ways in which these networked cameras mediate our actions. The findings are helpful in coming to terms with increasing use of networked cameras.

Non-professional use of networked cameras, because of its breadth, the many novel forms suggested, and the rapid pace of innovation of new devices and software applications, is a topic of study that cannot rely on laboratory research, nor mainly on quantitative data, but has to be studied with qualitative methods in the field. The research topic itself, the use of networked cameras at a time of their becoming ever more available, provides specific challenges that have to be addressed.

Related research on non-professional camera use, produced in increasing quantities over the last decade, applies various methods for conducting studies in this field, ranging from traditional social scientific methods to more experimental ones.

Traditional empirical studies of non-professional photo use, the earliest dating from the 1960s, focus – with the aid of observation, interviews, and examination of photo collections – on existing uses (e.g., Bourdieu et al., 2006; Chalfen, 1987; Musello, 1979, 1980; Oksman, 2006; Rivièrè, 2005; Okabe et al., 2006; Rantavuo, 2008; Villi, 2010). These studies provide important data for patterns of actual uses at the time of study, as well as on varying interpretations to do with the role of non-professional picture use in people’s everyday lives.

The sheer pace of camera technology innovation for mass audiences has made it in some cases difficult to find participants in a relationship to specific technological infrastructures, and this is why ever more studies incorporate attempts to reduce some of the barriers to image capture and sharing into the research design. This includes studies paying for data transmission costs during the research or providing participants with picturing technology, such as photo printers or cell-phone cameras, that are used as part of their existing picturing infrastructures (e.g., Lehmuskallio and Sarvas, 2008). This
approach is used especially in the field of human–computer interaction and called the “cultural probe” (Gaver, Dunne, and Pacenti, 1999). Cultural probes are used in providing users with existing devices or services for purposes of study and understanding of actual and possible uses.

An important stream of empirical studies of non-professional camera picture use provides prototypes of image capture and sending technologies to participants and focuses specifically on the uses of these. The first published studies of mobile camera-phone use, for example, were conducted with prototypes that were very cumbersome in comparison to current camera-phone technology (cf. Mäkelä et al., 2000; Koskinen et al., 2002). These kinds of studies are usually done to anticipate future uses or for further developing the prototypes studied.

To respond to the methodological challenges in studying technology such as networked camera-phones, anthropologists Daisuke Okabe and Mizuko Ito (2006) have proposed a “technosocial ethnographic framework” that takes both future-oriented methods from technology design and more traditional social scientific research methods into account. This means selecting from the aforementioned research methods, depending on the actual research cases at hand.

The empirical case studies discussed below follow Okabe and Ito's suggestion for being open to various methodological approaches, and this can already be seen in some related research. Additionally, because of their focus on networked picture practices, the empirical case studies have been done in various settings, thus reflecting George Marcus’s (1995) call for multi-sited ethnography. Marcus underscores the value of multi-sited research for specific research topics, and non-professional camera picture use in today’s “cam era” is, on account of its focus, especially suitable for multi-site research.

The empirical case studies focusing on non-professional picture use were conducted between November 2003 and April 2008, mainly in southern Finland and in the Berlin area. Several methods have been used, starting with participant observation, semi-structured interviews, photo-elicitation, and co-construction of meanings and patterns behind observational data and later including photo and video collection, analysis of log data, and reduction of barriers to image capture and sharing. In one case, the empirical material was collected from use of a networked camera prototype. The methods and analytical tools applied are introduced in the sections of this chapter that present the individual case studies.
The methods chosen provide for specific situated readings. All empirical case studies are constrained by various factors, such as the time available for data collection and analysis, financial resources, access to research subjects, and access to the material created during the research. In a perfect world for research, researchers would have constant access to research subjects and therefore be able to interview participants over and over again. In a world of social relations and other things of importance than research, this is – fortunately for all of us – not the case.

In general, it was possible to collect enough material in the empirical case studies and to try various research methods. Nevertheless, things went wrong in all of the studies as well: some people did not show up to be interviewed or did not give access to material they considered to be too private for public academic work. In research involving cultural probes and prototypes, there were software problems, and a few of the devices given out did not remain working for the entire research period. It was not always possible to collect all data available, not to mention analyze all of said data.

As has been argued in the debates on writing culture in anthropology (Clifford and Marcus 1986), all empirical research in itself is already an intervention in existing practices. The presence of a researcher in research settings hardly goes unnoticed, and it can be expected that those researched will try to provide a presentation of themselves and their doings that is considered “appropriate” and not morally contested. Additionally, interview questions tend to initiate a reflective process that those interviewed may never have gone through before. One of the interventionists interviewed for the fourth case study put this quite clearly by stating that “[y]our questions provoke me to think about these things.”

These limitations are part of empirical research, and here the goal cannot be to provide an “objective” or “total” account of affairs so much as situated readings that one hopes enrich the discussions surrounding the research topics. At best, the researcher, with those researched, co-constructs readings that are of interest to both stakeholders. Since researchers are the stakeholders in the research who (usually) have the most resources for reflecting upon the research topics, they, not those researched, have the responsibility to provide research results.

Taken together, the empirical case studies provide us with findings and insights that help to give answers as to how we use cameras in today’s world where they are ever more available and to how these networked cameras mediate our actions.
In the first case study to be discussed, people with a special interest in novel picturing technologies are studied in terms of the ways in which they use networked cameras. The empirical material was collected in southern Finland in 2006–2007 among five mothers who were roughly 30 years old and eight people belonging largely to their social networks. All participants were at the time of data collection already using novel picturing technology such as cell-phone cameras and online photo-sharing sites. The findings of this study are of special interest because of the claims in related literature of emancipatory and transformative effects in the use of networked cameras.

The second case study focuses on the ways in which shared photos are made public. Here strategies for photo-sharing on a popular Finnish photo-sharing site are inquired about. The empirical material analyzed consists of interview findings from the first case study, coupled with results of empirical data collection conducted in Finland in spring 2008, which focused explicitly on photo-sharing strategies. This topic is of distinctive importance since the ways in which private photos are made public have raised concern in related research and in discussions in mass media.

A third case study looks more closely at a novel setting for using networked cameras. Here a kindergarten in Southern Finland is the focus of attention. In the kindergarten, both teachers and children are introduced to a networked camera system. Here mobile camera-phones are used to depict kindergarten life, and the photos and videos captured are shared automatically via a password-protected Web site, which parents can access during time at work or later with their children from home. The empirical data were collected in summer 2006. The findings are especially interesting from a closer vantage point, in examination of the impact of networked picturing technology on a novel setting, but equally in providing an example of networked technology enabling different people to connect to captured images.

Whereas the first three case studies explicitly explore everyday uses of networked cameras in different settings, the fourth empirical case study takes an in-depth look at the ways in which images are explicitly used against images in order to raise public awareness. This relatively recent critical pictorial practice is used explicitly in working against the two visual orders outlined already, the synopticon and the panopticon. The data collection was done with 18 activists, mainly around Berlin, between late 2003 and early 2006, with some pauses in the study.
All empirical social scientific research relies on various other people, and can hardly be done alone. Findings from the first and third case studies have been published in joint publications, with co-authors kindly granting me the right to use this material here. In both cases, the relation between the joint publication and the subchapters is clarified in the text.
Digital snaps and the “Kodak culture”35

In order to come to terms with the impact of novel picturing technology on non-professional camera use, the first case study looks closely at people with a special interest in these devices. For this case study, a part of the description of the methodology, the findings, and a section of the discussion have been published in an earlier joint publication (Lehmuskallio, and Sarvas, 2008) that I cite extensively from. My co-author has kindly agreed to me basing a part of my empirical Ph.D. work on this material and our joint publication. The term “we” in the following is used to refer to the authors, whereas at times I provide in this work additional information that did not fit the publication format of the joint publication. In the original study I was involved in all phases of the research process, from planning, collecting empirical material, to analyzing and writing up the final publication. Parts of the collected material have been reanalyzed for purposes of the overall research questions of this Ph.D. work. Part of the findings, and especially the discussion have been extended significantly. In the following work references to the joint publication are marked in block quotations, in conventional quotation marks, or by referencing summarized work.

In our research setting, we studied qualitatively between October 2006 and February 2007 13 people, who already used networked camera technologies recording everyday life. They were found by posting an announcement on the front page of a photo-sharing and storage service, called Kuvaboxi, provided at the time of the study by the company Futurice. Today, in 2011, the service has merged into the photo-sharing service kuvat.fi, an example of the ongoing change that Web-based services are part of: they are never “ready.” (Ibid.: 258)

Following our publication,

[i]n the two weeks of having the announcement posted [on the front page of Kuvaboxi], 42 respondents were interested in participating in the study. Five mothers between 27 and 36 years were chosen[, since they seemed to be keen photographers, with an open mind for novel technologies. They did] not know each other and live[d] in different

35 This section is based on and extends work published by Lehmuskallio and Sarvas (2008) and Lehmuskallio (2009b).
parts of southern and middle Finland. In addition six people from the
mothers’ pictorial networks were also recruited. These networks are
called pictorial networks in order to differentiate them from the social
networks people are involved in: not everyone in social networks are
part of pictorial networks. Also, one couple was also recruited to
participate in the study. All in all 11 females and two males were
interviewed, and they were between 21 and 60 years old. (Ibid.: 258)

None of those interviewed considered him- or herself to be a professional photographer,
and only one discussed her interest in tourist photos as an amateur relation. For the
interviewed, photography was a means to an end, not done in order to earn money or to
be particularly in photography especially technically or aesthetically competent.

All of the participants were interviewed qualitatively with semi-
standardized interviews. The interview questions focused on how the
users learn about snapshot practices, what social networks are they part
of, and how do they engage in these with photographs and videos
(including planning, shooting, editing, showing and sharing). In
addition to the interviews, seven of the participants were given mobile
camera phones [as cultural probes] for approximately 8 weeks (two of
them for 4 weeks) and they [were asked to] use[...] them as if they were
their own. [...] All photographs and videos taken with the borrowed
camera phone devices were asked for after the field period. [...] Qualitative research was chosen for the possibility it provides to let the
users bring up unexpected issues, and semi-structured interviews
facilitated gathering of comparable material. (Ibid.)

The mobile data transmission costs were paid for during the data collection, so that the
bills for sharing photos or videos would not limit the use of networked cameras. The
seven participants using borrowed mobile camera-phones were interviewed a second
time after having used the devices, with these second interviews focused on asking about
the picturing practices with the borrowed devices, as well as on co-constructing
meanings and patterns of snapshot use. Whenever possible, the interviewees were asked
to show some of the pictures they took, including others than those captured with
camera-phones, and these were used for discussion of the research topic.
Giving seven of 13 participants mobile camera-phones with the ability to create short video clips and transmit these to photo-sharing sites or to other people with camera-phones aided in understanding the use and impact of novel picturing technology in their everyday life. Additionally, the announcement assured that those interviewed were actually interested in novel picturing technology.

The overall empirical data collected is composed of the interviews done and the pictorial material gathered. As we explain:

All in all 17 interviews were made each lasting approximately 60 minutes. The photographs and videos asked for were the one’s taken with the borrowed mobile phone cameras. Here the research subjects were free to delete pictures or to decide not to give us any of the taken material. We gathered 368 photographs and 100 videos, which is approximately 70% of the material that had been taken with the borrowed devices. Their relation to the total amount of pictorial material the research subjects take in their daily lives was asked for in the interviews, but not verified by going through all snapshot material that the users had.

The interviews were analyzed thematically focusing on the ways in which the participants have learned to take photographs and videos, their social networks, and in the ways in which the picturing process from planning to shooting, editing, exhibiting, and sharing evolves. The focus on the pictorial networks helped to pay attention to the role shared conventions have in shaping pictorial practices. The collected pictorial material was analyzed regarding the motifs pictured and reflected with the information gathered in the interviews. (Ibid.: 258–9)

Richard Chalfen’s sociovidistic framework, which has been applied in various studies of snapshot photography (Chalfen, 1987, 2001; Musello, 1979; Ulkuniemi, 2005; Miller and Edwards, 2007), served as guidance for organization of the analysis. The framework is based on the assumption that pictorial communication is a shared social process that shows specific patterns. These patterns are, in this Ph.D. work, called visual orders (Seppänen, 2006) in order to connect Chalfen’s empirical tool to theoretical debates in later studies in visual culture and Bildwissenschaft.
The processual approach in application of the sociovidistic framework distinguishes among events in pictorial communication, helping to show various phases in the “life” of camera pictures, including planning, shooting of pictures (focusing on what happens both on- and off-camera), their editing, and distribution and exhibition for others.

Each of these communication events is discussed in relation to components that focus on participants and settings, as well as on forms of communication, including topics, message forms, and codes of pictorial communication. These categories provide for a first empirical description of specific gazes, be they of the “Kodak culture,” tourists, families, male, oriental, or something that has not yet been explored.

Chalfen’s sociovidistic framework, as it is, implies a specific material infrastructure that in itself is not articulated explicitly in the framework. The infrastructure for a film-based “Kodak culture” influences how images are used and for what purposes, although, obviously, it does not dictate actions. Chalfen (1987: 163–164), who favors a focus on symbolic activities over technical determinacy, suggests the study of technological agency as a future research challenge, mainly because of the surprising similarities in home-mode pictorial communication among different people living far from each other. The pictorial media we use in interactions affect our relations to ourselves, as well as to others.

Compared with the film-based infrastructures that were integral into the emergence of the “Kodak culture” described by Chalfen, digital ICT infrastructures are, from a technical viewpoint, very different. Studies of the use of novel picturing technology have highlighted novel uses of pictures, as discussed above. This empirical research on digital home-mode communication shows, in contrast, that film-based use patterns continue to be important ways of doing photography in ICT environments (Lehmuskallio and Sarvas, 2008; Lehmuskallio, 2009b). Similar findings were later reported by, for example, Rantavuo (2008) and Rose (2010).
Findings: A sociovidistic analysis

A few research subjects took far more pictures than expected, some claiming to take as many as 20,000 photos a year, whereas others took far fewer but still at least 1,000 photos a year. Most had at least two cameras that they could use for taking pictures, and some had as many as five separate cameras. The participants distinguished only little between snapshot photographs and short video clips captured with digital cameras. Traditional home videos, longer in format and made with specialized devices, were, on the other hand, seen as being different from snapshots, since they require special attention. (Cf. Lehmuskallio, and Sarvas, 2008: 258–9)

In line with the non-professional character of camera use, only one person interviewed actually possessed a dedicated video camera. Pictures were taken of things that matter, at times that matter, and mostly in a positive vein. For those researched, snapshot pictures and their value for specific moments in life were self-evident and did not need separate explanation. The picture practices surrounding snapshot photos and videos are an integral part of everyday life that is seldom questioned. As we explain:

This is why the interviews were already an intervention: All interviewed described for the first time verbally how they have learned to take snapshot pictures, why they take snapshot media, how new devices impact their picturing habits, and how their picturing processes evolve. Although not all were fluent in verbally reflecting their snapshot picturing practices, it was still possible to determine common behavioral patterns and to highlight individual differences. (Ibid.: 258)

In the following I go through visual patterns with the aid of the sociovidistic framework, focusing on the process of “doing photography.” Here I first describe the events in “doing photography,” the ways in which those interviewed had learned photography and how they planned to take pictures, shoot them, then edit, share, exhibit, and archive the images. In a second step, I describe the components, focusing on participants and settings as well as communication forms, including topics, message forms, and codes of pictorial communication. This work is based both on joint work, as well as a closer re-analysis done for the purpose of this Ph.D. work.

This empirical description of a specific way of using pictures is complemented with discussion of functional interpretations of why the interviewees take snapshot camera pictures. The empirical findings reveal, somewhat surprisingly, only gradual changes in
pictorial practices in comparison to the earlier “Kodak culture” discussed in related literature, so the continuity of a “Kodak culture” is discussed in reference to an infrastructure, an apparatus, supporting a specific pictorial practice, with business models, advertising, and legal prohibitions directing what and who should be depicted for which purposes.

**Events in pictorial communication**

*Learning to take snapshot pictures.*

The research subjects had all been pictured by their parents and relatives when they were children. The first camera they used themselves was the family’s film camera or a camera they had received as a gift or bought themselves. When getting into their teens, most informants started to take their first pictures, thus becoming snapshot photographers while still remaining subjects for family photographs. Three interviewed took their first pictures in their late teens, one of them just before his first child was about to be born. Only one interviewed had started to take her first pictures about two months before the interview, although she was already 53 years old. [She is, in her picturing habits, the odd one out when compared to the others.]

The motifs that the research subjects pictured as teens were hobbies and friends. Especially horses and schoolmates were important picture motifs – motifs that were a special and exclusive part in the teens’ lives. On important family occasions such as birthdays, confirmations or weddings it was usually still the father or mother who took the pictures.

Taking pictures became later on a habit that had been learned by watching and asking others in face-to-face situations. In trying to extend their current picturing knowledge all research subjects later relied for advice on people and on mediated information. Articles written in newspapers, pictures seen on TV, Internet-sites with photographs, and exemplary stock photography (e.g., in frames) were mentioned when asking for influences for everyday picturing practices.
The influences mentioned did not include new and different uses propagated by news reports or some marketing, or critical uses of cameras often talked about in discussion of the emancipative role of user-created content. For most interviewed it was hard to name any one or two single influences; taking pictures somehow just evolved as part of everyday life.

[...The] short video-clips [captured with digital cameras] were not described in relation to [...dedicated] video [devices] but rather as a part of snapshot photography. Home videoing was not a common activity that the users had experienced while being children – rather it was something special that had been taken up only by few specialized people in their social networks. [Therefore, creating one's own videos was, for the research subjects, not a common non-professional activity but already in itself something extraordinary and special.] (Ibid.: 258)

Planning.

Taking snapshot pictures was seldom an activity that the participants explicitly planned in advance. Rather it was regarded self-evident when to carry a camera, when to take pictures, and with whom to share photos. Only on special occasions did the interviewed specifically plan in advance how pictures should be taken, for example, on rites of passage like confirmations or weddings. Here many employed professional photographers in addition to taking pictures themselves. On other occasions taking pictures depended rather on carrying a camera in order to be actually able to take photos and videos. Camera phones have brought an important change in the ability to possibly take pictures, since they are almost constant “companions” – although they are not used constantly. (Ibid.)

Shooting: Behind the camera and on-camera.

Shooting pictures, as well as being at times depicted, was at the core of snapshot photography as experienced by those interviewed. Taking pictures, and being depicted, is a form of focusing common attention on a shared undertaking. The one taking pictures
choreographs a specific kind of look that is enacted with the aid of a camera. Those depicted know how to act, posing in specific forms, turning their bodies for images that respond to this specific kind of look. Here images *in corpore* are at times more important than the actual photos taken.

Those interviewed described distributed roles in shooting pictures, as well as in being depicted. Some did not carry a camera at all on special occasions, since they knew that others in their social network bring a camera to these events and take the role of photographer. Although the people interviewed were often explicitly those with an especially active role behind the camera, some nevertheless were not the “official” photographer for specific family events. A familial gaze of important familial rites of passage, such as birthdays celebrated with relatives, is constructed by those who have been doing so longer. These people create a visual memory of family events, which is distributed to others as well. It is their embodied look, mediated via a camera, that is represented for others to see.

Being depicted on camera was explained as something belonging to specific events and thus as a natural form of situational interpersonal interaction. Visibility on camera is a sign of belonging to the ones depicted. Some of the interviewees who liked to take many pictures themselves nevertheless had problems in being depicted, since their images of self seldom corresponded to the pictures taken of them. Standing behind the camera was for them also an excuse for not being depicted. The camera unites and separates the depicted.

*Editing.*

Editing helps the editors of pictures and videos to make their point more clearly. The possibility to add text, highlight certain parts of the pictures, or to cut unnecessary footage from videos were known to assist in pictorial communication. All interviewed were interested to learn more about editing techniques, but claimed not to have currently the time to actually devote themselves to editing. (Ibid.: 259)

The only actual editing done is in the choice of the pictures to be shown to others or shared via various means of communication, such as photo-sharing sites or sending of photos in letters. One of the interviewees even claimed not to filter the pictures taken at all, explaining that she decides before she takes a picture whether it will be the kind of
photo that can be shared with others. Accordingly, all pictures she takes, she explained, are pictures that can be shown to others and shared further.

All interviewed looked mainly at their photographs and videos when they had spare time. Looking at photographs, organizing them, and deciding which to choose for sharing and possible printing were done when there seemed to be free time, and this was usually done alone. (Ibid.)

The person taking the pictures is, according to the interviewed, usually also responsible for subsequent editing. Taking pictures, selecting the “right ones,” and sharing them for others to see becomes an additional chore, although not necessarily an unpleasant one.

**Sharing of snapshot images: Pictorial networks.**

Online media sharing and publishing services, e-mail, instant messaging, MMS, and related possibilities to send pictorial material over the Internet with little effort and at low cost have broadened the participants’ use of communicational forms. The technologies enable more frequent contacts with people whom the interviewed do not often meet face-to-face. [...] Photos and increasingly also short videos were shared mostly to people that are important to oneself. Nevertheless, social networks have to be differentiated from pictorial networks. Although all interviewed did share their pictorial material with many people in their social networks, all had exceptions that were not necessarily related to the importance of a person in their everyday lives. (Ibid.: 260)

One of the interviewees even had a person she considered very special with whom she would never share pictures of herself and her family, since she did not receive any images back and therefore focused on communicating with that person in other ways. Pictorial communication is only one form in a wider range of means of communication.

If some were excluded from personal pictorial communication, the reason was that they do not themselves participate in pictorial communication or that they do not possess the infrastructure needed to look at, for example, digital photos and videos via the Internet. In one case, an interviewee explained that she does not share pictures with her grandparents since the grandparents do not take new photos. According to those
interviewed, the old pictorial material is not interesting to look at anymore. In order not to be tied to an exchange of images, she had decided to withhold sharing pictures with them. (Cf. ibid.)

All interviewees, except one, were sharing their material mainly with people they knew well. In other words, pictorial communication was, by most, not used in order to interact with strangers, although this could occur, because many of those interviewed were, in fact, sharing some images publicly, a factor that will be explored in more depth in the next case study, “Dealing with privacy in online picture-sharing.”

The sharing applications were not used exclusively. For example, pictures sent via e-mail would not prompt only answers via e-mail. Rather, they enabled the maintenance of communication cycles by answering for example, to pictures sent by e-mail with a phone call or by dropping a line at one’s profile on a web-service. Web-services were used as a platform to awaken interest in the users or their “digital self” by sharing pictures directed privately at existing peer communities (i.e., family, relatives, friends, colleagues, people from hobbies). Only one interviewed shared some of his pictures publicly, using IRC-galleria, a social networking site directed towards the younger population.

[...The Multimedia Messaging Service (MMS), used for sending photos between cellular phones,] both replaced and triggered phone calls. On the one hand, MMS replaced phone calls, which was something that the interviewed had experienced already with text messages and e-mail. On the other hand, sending MMS did also trigger phone calls and SMS traffic. For example, a research subject received an MMS from her daughter with a picture of her grandchild on a new sled. The received picture gave the research subject a feeling of actually sharing that moment with the grandchild. “Distant closeness” [...] was enforced by calling the grandchild’s mother and talking with both. Here computer supported pictorial communication, combined with speech, created a feeling of being present with people not sharing the same space. (Ibid.)
Exhibiting.

Looking at snapshot photography was, for most of the subjects, a solitary activity, and this is in contrast especially with the communal aspect of a lot of snapshot picture-taking. Especially the users in the capital area of Helsinki noted that gathering together to look at pictures is not a common activity. A mother and her pictorial network from a smaller town in Middle Finland differed in this instance: looking at pictures was for them still a social event and a reason to get together. Digital sharing of pictures might create new kinds of conversational interactions, which may replace the activity of gathering together to look at pictures. (Ibid.)

Related research on camera-phones’ use has underscored positive emotions that are achieved by sharing photos on moblogs\textsuperscript{36} or photo-sharing sites, or by sending pictures from one camera-phone to another by such means as MMS. Distant closeness (Van House, 2006, 2007), intimate visual co-presence (Okabe and Ito, 2006), and mediated presence (Villi, 2010) are concepts used for talking about this. If looking at photographs is increasingly a solitary activity, done alone with the aid of ICT devices when time allows, it is not that clear what the further mediation of everyday relations does to, for example, actually gathering to look collocatively at camera pictures.

Archiving.

The picture files were stored in various ways but mainly in folders on the hard drive of one’s personal computer. Most interviewees used picture software that had come with the personal computer in order to look at the images, and archival again was done via the host operating system. Many had difficulties in finding specific images that were somewhat older, since metadata had not been added to the pictures, and some even had problems in using automated metadata already inscribed in picture files, such as time and date of capture.

Just transferring images from devices, such as camera-phones or digital compact cameras, was difficult for some of the interviewees, and they needed help in doing so. Additionally, most of those interviewed had used film before turning to digital capture,

\textsuperscript{36} A moblog is a publishing venue for photos and videos captured with a camera-phone. See, for example, http://moblog.net/home/ (last accessed on September 1, 2011).
and they had picture sets in different formats. Film prints were kept in shoeboxes and photo albums, and digital image files on one's hard drive. Since most who were interviewed were taking quite a few pictures, finding the ones needed for future use was at times quite cumbersome.

**Components of pictorial communication**

**Participants.**

The core of those depicted is formed of one’s family, parents, a few relatives, and a few close friends, whereas other people were fairly seldom subjects in the photographs of the people interviewed. Children were depicted the most by far, and many of those interviewed who were themselves snapshotters expressed a dislike of being pictured. Non-human participants, such as pets or special possessions (e.g., a new house or car), are also included in the range of those depicted in pictorial communication. The range of people involved is, accordingly, relatively small, not only in the pictures but also in terms of those to whom pictures were shown and with whom they were shared. With all the possibilities available to create novel forms of pictorial communication and connect to strangers and people with similar interests they did not know yet, these interviewees for the most part had decided not to do so.

**Settings.**

The camera pictures were taken in familiar places, such as one’s living room, yard, or summer cabin. Similar places belonging to friends and relatives depicted were venues of pictorial snapshot communication, such as their living rooms or gardens. These are mainly private places and belong to a visually protected area of domestic peace, where taking pictures and being depicted is protected legally.

Public places were used for pictorial communication mainly at special events. Being at a concert, attending a sports event, or doing something in other ways special in a public or semipublic space was seen as a reason to take pictures there. Also, traveling to other cities or countries encouraged taking pictures in public places, mainly at tourist sites and of other “appropriate” photo opportunities. That what was regarded as special

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37 In Finnish, called *kotirauha.*
and worthy of being depicted is relational and depends on those taking the pictures. Looked at from a more general level the settings and topics depicted, nevertheless, do not bring up many surprises in comparison to other studies of snapshot photography (e.g., Bourdieu et al., 2006; Musello, 1980; Chalfen, 1987; Ulkuniemi, 2005, and see also later studies such as that of Rose, 2010).

Important in the study of settings of depiction is the relatively constricted spatial area used for doing snapshot photography. Work contexts, public traffic, and stores are seldom, if at all, settings for depiction, whereas the spatial settings in which people “feel at home,” are the ones most often used for doing photography. This suggests that the looks mediated via cameras in this kind of non-professional photography are of a specific kind, belonging to spheres considered domestic and private.

**Topics.**

All interviewed were asked about their motifs pictured and the descriptions were categorized using the interview data, previous literature on snapshot photography and photo amateur guidebooks on how and what to photograph. The categorization was later verified with the five people who were interviewed twice.

People, and especially the people close to oneself, were the most important subjects in snapshot photographs and videos. Regular rituals, special rites of passage, and on vacation as a tourist were the most important occasions for taking pictures. Thus it is not surprising, that getting a child and going on a vacation were the most important reasons for the participants to buy a new camera; be it for video, photography, or both. (Ibid.: 258)

Taking pictures was, for those interviewed, mainly a communal activity, done when other people are around. Here the camera itself has agency in getting people close to each other, to pose and smile together and thus share a moment that feels special. While taking pictures, the camera becomes a boundary object (Star and Griesemer, 1989), connecting bodies with each other in order to create shared images.

We divided the pictures taken into three categories, according to the motifs and uses seen with the pictures: 1) “Traditional snapshot pictures,” 2) pictures requiring special knowledge, and 3) pictures formed because of the impact of cell-phone cameras. (Ibid.)
1) “Traditional snapshot pictures” are important pictorial content in “Kodak culture”. These kinds of photos are taken, by every interviewed, of those important to oneself, during events that matter, such as rituals and vacations. (Ibid.)

As we explain, people close to one included children, a spouse, parents, siblings, other relatives, friends, and at times colleagues and acquaintances from hobbies. For those with children, the children were pictured in an especially large percentage of pictures. Pictures taken at rituals included those at Christmas, Midsummer (in Finland), and birthday celebrations, as well as rites of passage such as confirmations and weddings. Events such as concerts, football games, or ice-hockey games were important picture-taking opportunities, as were vacations, for which use of a camera was taken for granted by those interviewed. Every interviewee took traditional snapshot pictures, except the 53-year-old female who had taken her first pictures only a few months before our interview. (Ibid.)

2) Pictures requiring special knowledge have to do with activities that not all of the interviewees share but that they could take pictures of if they happened to be involved in them. These cases include taking pictures of pets, special hobbies, or pictures considered “arty,” or imitation of characters known from mass media. (Ibid.)

A special feature, which came up in only two interviews, is the use of non-professional footage in educating oneself or one's children. One woman interviewed would video her children’s ice-skating performances and show these videos to them later so that they could become better ice skaters. Another person used a mobile camera-phone to film parts of theater rehearsals, trying to learn how to perform better with the aid of the video material. (Cf. ibid.: 258–9)

Whereas many do take pictures of their children's individual development, as when documenting a child’s first tooth or first steps, these pictures do not serve educational purposes. They are taken instead for remembering later how one’s child looked before, very much in line with the picture-taking purposes in “traditional snapshot culture,” as will be argued later. In our research we noticed, that

[t]hese motifs differ from traditional snapshot media in requiring special skills, access, experience and knowledge not shared by almost every member in society. They require special knowledge because not everybody has (the same) pets or engages in the same hobbies, neither do all use photographs or videos in order to educate themselves or their
The pictures requiring special knowledge are especially interesting when one tries to understand where cameras will be used next by non-professionals. When cameras become inseparable companions to, for example, specific hobbies such as skateboarding or climbing, it is not a large mental leap to using cameras for similar purposes in other hobbies as well, whether swimming or ice skating. For these kinds of pictures, those interviewed quite often had clear use cases in which they had learned special uses of cameras and employed them in novel settings.

3) The picture genres that we describe following related research as having formed because of the impact of cellular phones are pictures taken in order to create emotional contact over a distance ("distant closeness," (Van House, 2006)), functional pictures, such as those from a shopping list, or pictures that are taken because there is nothing else to do (Kindberg et al., 2005). (Ibid.)

The first category predominates in the pictures taken and shown during interviews, whereas the second category provides for some difference in the ways in which those interviewed used cameras non-professionally.

In contrast, one of the persons interviewed, the 53-year-old woman, differed in her pictorial practices from all others interviewed. She had never been socialized into the "Kodak culture" as being behind the camera herself and had been using a camera herself for only a few months. She started shooting photos and videos after having received a mobile camera-phone for Christmas. Although the other 12 interviewees concentrated mainly on topics, participants, and settings known from the film-based "Kodak culture," she was the one using novel ICT in a manner similar to what is described in related studies of mobile camera-phone use. She concentrated on the third category, on functional pictures and instant mediated communication. She took pictures of shopping lists and shot videos of herself doing dance moves so that she could enhance her dancing techniques. Distant closeness was created by asking her daughter to send MMS pictures of the young grandchild, so that she could feel like a participant from afar in the moments depicted. She would respond to this phatic communication by replying with a cell-phone camera picture or calling the grandchild. She even took some pictures when bored – for example, while waiting for a bus. (Cf. ibid.: 260)
Almost all motifs are pictured taking photographs, short video-clips and home videos. Quantitatively, the research subjects take photographs the most, followed by video clips. Home videos (i.e., “heavyweight” videos) are only taken seldom and only one informant of the 13 interviewed actually had a functioning video camera in her home.

Digital pocket cameras were the most common picturing devices. The borrowed mobile phone camera was used, but relatively little compared to the overall amount of pictures the interviewed claimed to take: the yearly amount of taken photographs ranged according to the interviewed between 1.000 to 20.000 a year and the range of video footage between one to ten hours a year. (Ibid.: 259)

Accordingly, the photographs and videos collected are only a small part of the overall picture collections.

The devices used had an impact also on the form of the camera pictures. For example, videos were not transformed into stills. Neither were still shots used to make videos. Additionally, at the time of the study, only a few photo-sharing and social networking sites allowed for sharing videos, so mainly still camera pictures were shared. Following our publication, the studied

did make a distinction between the still photographs captured and the short video clips captured with the same devices. The differences were primarily related to the technical characteristics of video (i.e., sound, movement, technical compatibility), the richness of video in representation (i.e., more intimate, more alive, more comprehensive, more personal), and the richness (or heaviness) of video in capture (i.e., required attention and concentration in capturing, need for editing, need for extra effort). [Here, video technology was considered to have special agency.]

However, in regard to the participants’ pictorial practices, there was no clear distinction between the snapshot photographs and snapshot videos. The short videos were mainly taken of the same motifs as photographs (with few exceptions), neither photos or short
videos were edited, and in showing, looking, and sharing practices the participants made no distinctions between the short videos and still photographs. This similarity in practices was evident also in the difficulty the participants had in explaining why in some instances video was preferred over still pictures, and vice versa. Traditional home videos [...captured with dedicated devices] had, in contrast, different practices, which were nevertheless not as ubiquitous as photos and short video-clips. (Ibid.: 261)

Most of the people interviewed had their own mobile camera-phones, which were used at times but quite little in comparison to other picturing devices. Issues brought up in relation to these devices are that cell-phone camera pictures can be taken quite casually, since the quality expectations are not as high as with dedicated cameras, considered to be “better.” Additionally, since cellular phones are carried along in everyday life, people have cameras in ever more settings that can be depicted. In a way, special moments to be depicted don’t have to be planned as before, since a camera is already carried along. The interviewees talked about cell-phone cameras allowing for further depiction of functional pictures, candid photos, and taking images for others that are thought of as “good jokes” (cf. Koskinen, Kurvinen, and Lehtonen, 2002). The possibility of (almost) instant sharing via 3G, GPRS, WLAN, and other networks allows for the creation of distant closeness, sharing time while in different locales.

Code.

The pictures taken show a striking dissimilarity to technical skills displayed in professional photography and videography found in publicly circulated mass media, as known from related research. The exposures are aesthetically challenged, including both under- and over-exposed pictures, and also feature the use of strong frontal flash, a built-in feature in many of the cameras used. Those depicted are often somewhat blurred and are shot from various distances. Most pictures include only a few people, at the center of attention, ranging from one to about three depicted. Only pictures from special occasions, such as large family gatherings, weddings, and the like, include significantly more people.
The visual code of snapshot photography is thus identifiable as a distinct genre (Lüders, 2010) of its own and is at times used in professional productions explicitly because of its recognizability (Chalfen, 1987; Rose, 2010).

The participants were happy with the quality of the pictures; even camera-phone pictures with relatively low resolution were usually considered sufficiently “good.” Part of the snapshot pictorial code is that technical skill is not of special interest, since it is the people, events, and settings depicted rather than the actual technical finesse that count. Snapshot photographs mediate an embodied look, and here the ways of looking are more important than the technical quality of the mediation. In many cases, the pictures taken were never actually looked at and remained on computer hard drives.

Problems experienced

As we point out,

[i]t is especially important to focus on critical issues that the research subjects bring up when researching current and possible new uses of technologies. [...] Problems that arouse in our study were often related to the technology, the need to regularly learn new software, the limited functionality of the picture management software, the short lifecycle of batteries, and low memory. Picture quality was usually regarded as sufficient, if the users were casual snapshot photographers, but bad if they were more dedicated photographers.

The research subjects named fears related to the reliability of current digital infrastructures. These were thought to crash and lose important data. Also, failures in the infrastructure of web services with restricted access were mentioned, namely failures that would make it possible for strangers to have access to material regarded private. Here people with unsound intentions and Orwellian like institutions were prominent figures that came up in the interviews. Also losing one’s mobile phone filled with personal data was a scenario that was considered delicate. Finally, the increasing use of mediated information diminishing face-to-face communication was brought up. The fear of focusing rather on technical gadgets than on
people was a reason for one research subject not to use the newest camera technologies and web-services related to them.

Copyright issues were only thought of as interesting if one’s pictorial material would be published by state or company representatives[, a source of conflict on some photo-sharing sites that claim immaterial property rights to all content transmitted via their services (Andrejevic, 2011)]. The snapshot material in itself was not seen as bound to authorship. This supports the claim that snapshot pictorial communication should be seen as especially important for maintaining close social relationships, and to a lesser extent, if at all, to interests capitalizing with the material. (Lehmuskallio, and Sarvas, 2008: 261)

Professional business models again build explicitly on users’ lack of interest in capitalizing on their intimate interactions, gaining –especially in online environments – access to data that can be turned into commodities. The promise to capitalize on non-professional data is a major driver for companies giving users free access to their services (Manovich, 2009).

The already existing amount of pictorial material was regarded by some as difficult to come to terms with, since pictures seem to be abundant. They consist of informative pictures, such as advertisings, pictures in magazines, image flows on TVs and public displays, and operative pictures, such as those taken with surveillance cameras. [...(Werckmeister 2004)] Catchwords such as “information overload” and “visual pollution” have been used in other contexts to refer to this difficulty to come to terms with an ever more mediated world. (Lehmuskallio, and Sarvas, 2008: 261)
Discussion

In contrast to a wide array of related research on the use of digital picturing devices, the findings do not point to very many extraordinary uses. The affordances of information and communication technologies for novel kinds of pictorial communication were acknowledged by those researched but seldom taken up to a larger extent.

In order to understand why cameras are used in this context in the ways described, I will focus on functional interpretations of snapshot picture use (cf. Chalfen, 1987) and how technological changes have affected pictorial practices gradually rather than sharply, as well as present reasons the specific form of snapshot communication found, called here the “Kodak culture,” has been able to become a fact via business infrastructures, marketing, and legal prohibitions.

Functional interpretations of picture use

In the chapter giving a brief history of converged techniques, I focus, through examples, on embodied desires related to seeing, such as the desire to represent the seen, extend the reach and scope of the visible, fix the seen in time, or transmit the seen in space. Networked camera technology affords these uses of cameras, as shown with the Panoramio example (see Figure 1), but they are not the only reasons camera pictures are used. Snapshot photography, as explored in the case study, serves various purposes and is done for different reasons. Comparing these interpretations with related research shows important continuities but also some rather novel uses explored less in previous studies.

One of the major reasons for snapshot photography, afforded by the possibility to use camera technology in order to fix the seen in time, is its use for remembering. By looking at a photograph, the person regarding the picture is able to synthesize and animate what she sees and thus use the photo as a cue for living out memories. The use of cameras as media for remembering was brought up in the interviews, as well as in related research (e.g., Rose 2010). Taking tourist pictures in faraway places of what one sees and depicting one’s growing children are described as ways to remember later what has happened, as well as to document change. Family albums, travel albums, and similar picture collections are image archives that can be used for triggering an embodied image archive, one’s memories. The images captured and later displayed order memories, as
well as trigger them when one goes through the pictures. Past events, which may already have been forgotten, are remembered through looking again at pictures of those events, with photographs thus being used as part of techniques of remembering.

These pictures are used in triggering memories and serve as documents of past events because of a general trust in their evidentiary nature. (cf. Rose, 2010) A camera is thought to show things “as they are,” not including or excluding anything that was not before the lens at the time of capture. This is emphasized by not editing the pictures taken. The special framing and choice of subjects on the part of the persons behind a camera was discussed only once by an interviewee, when she reflected on her habit of taking pictures of ugly and dirty areas when traveling. These pictures, which do not conform to a general tourist gaze (Urry, 2002), are nevertheless not questioned in terms of their indexical relation. Snapshot photography, although generally used in creating an idealized and highly selected “slice of life,” are similarly linked to the idea of showing things as they happen. The techniques employed in use of camera technology are considered to live up to the expectation of actually fixing the seen in time.

Picture-taking and subsequent sharing and showing are catalysts for social activity, providing for interaction (cf. Musello, 1979). Whereas some situations are seen as calling for picture-taking, such as weddings and other meaningful rituals in life, other situations are explicitly choreographed around cameras or pictures that are shown. In these cases, pictures in a way call for their own cultural practices. Those interviewed who still maintained a practice of looking at snapshot photos and videos together would explicitly invite other people to their homes to look at these pictures. The pictures support conversations and are used as objects to talk about but also as things that help to gather people around them, as boundary objects (Star and Griesemer, 1989). Also the act of getting a camera out in a social situation calls for playing or performing in front of it, by making faces or posing in specific ways in order to be depicted “correctly.” The techniques of the body employed would be considered in other circumstances, without cameras and photos involved, deviant behavior (Mersmann, and Schulz, 2006).

The interaction in front of a camera, captured as photos or videos, shows social bonds and relationships. Those pictured are usually people close to oneself, who are of special importance, and, so, being photographed is a way of showing that the photographer has a special relationship to those depicted. Strangers and people not that close to one are often left out of snapshot depictions. The interaction with and in front of
the camera stimulates and facilitates the enactment of these bonds (Musello, 1979), increasing or maintaining group cohesion (Mäkelä et al., 2000).

Whereas taking pictures and showing them to others is a general form for triggering interaction, the participants in these interactions are usually known beforehand and consist of a selected number of people known to oneself. One of the interviewees in a later study, presented closer in the section “Dealing with privacy in online picture sharing,” took some of her pictures in order to share them publicly on photo-sharing sites in order to get feedback and thus get to know other people. She participated in specific photo-oriented activities that are promoted for anyone’s participation. This is an example of breaking the relatively closed and intimate pattern of snapshot photo interaction by including other people as well.

The depiction created, but just as much the form of the picture-taking, is a form of presenting one’s self or a social group. This perspective has been taken by Goffman (1990), whose work has served as a backdrop for various empirical studies of non-professional photography (Chalfen, 1987; Musello, 1979; Ulkuniemi, 2005; Siibak, 2009). Goffman’s main concept, face, is outlined as an “image of self delineated in terms of approved social attribute,” and thus a specific image in corpore.

In face-work, following Goffman, we discipline our selves by performing moral characters that are in social interaction emotionally rewarded or sanctioned. Performing proper face is valued and acknowledged by interaction partners and is emotionally satisfying, while unsuccessful face-work accounts for blushing, shame, embarrassment, and other unpleasant feelings. The normalizing judgement in “proper” face-work is especially interesting, since in face-to-face interaction mutual face-work has agency in stabilizing social interaction. “Successful” face-work provides a specific order of the visual that maintains social order, hierarchies, and – through these – power structures. Acting “correctly” in pictorial practices underlines social bonds with specific people.

Interaction rituals, such as those in which the people interviewed use cameras, have varying outcomes, depending on their centrality in participation in exactly those interactions and on ritual intensity. (cf. Collins, 2004) Successful interactions give participants confidence, a good feeling, and readiness for further action. Knowing how to pose together, what kind of photos to take, and how to share them enable successful interaction mediated via cameras. These kinds of interaction rituals are likely to be reproduced by individuals participating in them, since emotional energy is high and
symbols of social relationships have been created. Collins, who extends this perspective, explains:

What is mutually focused upon becomes a symbol of the group. In actuality, the group is focusing on its own feeling of intersubjectivity, its own shared emotion; but has no way of representing this fleeting feeling, except by representing it as embodied in an object. It reifies its experience, makes it thing-like, and thus an emblem, treated as having noun-like permanence. (Collins, 2004: 37)

The mutual focus of interaction assists in the creation of shared forms of looking and presenting self, and of organizing a common perspective. The camera, by helping to arrange social interaction and fixing the seen in time, affords the representation of “this fleeting feeling […] embodied in an object.”

In this perspective, unsuccessful interaction rituals produce symbols that are negatively charged, failing to create group solidarity, positive emotional energy in individuals, and common standards of morality. These are usually contested in the future, since the emotional energy has not been satisfying.

In presenting face pictorially, in images in effigy, we externalize a specific image of ourselves and/or of others with the aid of specific media, and we often treat these images with special reverence, as if they would be part of us. As will be shown later, the indexical character of camera pictures is especially important for doing so.

Already in the late 1970s, Musello (1979) categorized ways of presenting face in snapshot photography as: idealization, natural portrayal, and demystification. These categories are still useful in showing various forms of self-presentation found also during this research.

Idealization refers to formal, posed images that are usually captured to commemorate important events in one’s life, such as weddings. These pictures are often taken by professional photographers, but if not, special care is still put into taking the pictures as well as being present in them. Idealized depictions show the bodies depicted as moral characters, conforming to personal and assumed social ideals (Goffman, 2005). Thus an idealized graduation picture, for example, might show the value ascribed to education and depict education itself as a necessary step in living a good life. Failing to take a graduation picture, or not taking it according to assumed social norms, might be understood as denigrating the values on which others implicitly or explicitly base their
lives. Idealizations are also those pictures in which, for example, friends pose together, smiling and hugging each other. Here, the main difference from more formal pictures lies in that which is idealized, and how these social relations are lived out. In idealizations, the prototypes for snapshot images have agency over the specific representations.

Natural portrayals are more informal ways of taking pictures, including candid shots and surprising picture-taking. These are attempts to show those depicted in “natural” poses and environments, and many have learned to pose specifically for “natural” portrayals. Here, technical quality and formal conventions are of less importance, since the pictures show those depicted as they might be seen when looked at without camera technology.

Idealized pictures and natural portrayals are impressive and favorable presentations of those depicted, conforming to shared social values. Most snapshot photographs, including those seen in this study, conform to them, showing the agency of shared prototypes suggesting how to act with and in front of cameras in the “Kodak culture.” Demystification again is a way of counterining idealized and natural portrayals, showing the depicted in a less favorable light. Those depicted might make faces or refuse to pose formally, or the picture-takers may see an opportunity to take demystified pictures, such as of someone lying drunk on a floor or displaying sexual behavior. These pictures are ways of making fun of others, or mocking them, but as well depictions that are seldom shown to outsiders. They remain depictions showing other kinds of selves than seen in more “favorable” images.

Picture-taking in itself, but equally a depiction made, is a way of showing cultural and social membership (Chalfen, 2001, 1987). Knowing when to take pictures, how to pose for them, what to do with them, and how to comment upon them is a shared way of ordering experience as it happens. The clothing chosen, as well as the people included in pictures, can show who and what is considered to be an important part of one’s universe. “Kodak culture promotes the visual display of proper and expected behavior, of participation in socially approved activities, according to culturally approved value schemes,” says Chalfen (1987: 139). Snapshot photography is a form of tacit knowledge, of socially appropriate behavior that is its own pictorial practice, its own way of doing things.
Gradual changes in pictorial practices

The so-called digital revolution affects the ways in which people communicate pictorially. Nevertheless, the findings of this empirical study show that established snapshot practices are important in guiding people in their pictorial behavior. In comparison to previous studies of snapshot photography, we find astonishing similarities, showing that the motifs depicted and those they are shown to and shared with remain similar. Doing the “Kodak culture” seems to remain a core activity of non-professional digital photography and is not, at least in this case study, overthrown by technological agency and its possible new uses. Possibly novel picturing practices are in this context built upon existing and established practices (Miller and Edwards, 2007; Gye, 2007; Rantavuo, 2008). Therefore, using novel picturing devices resonates well with an established visual order. As discussed in our joint publication, this finding is not obvious:

news, public discussions, and marketing emphasize the use of camera phone and digital camera videos in situations and settings that were previously unlikely. They explicitly encourage people to use these devices differently. News organizations encourage people to capture newsworthy events, public discussions often bring forth the negative uses of videos (e.g., harassment and privacy violations), and marketing of products and services paint a picture of spontaneous and innovative new uses and applications for video clips. Also, the best known video sharing service YouTube and the videos it includes have a strong effect on how people associate and perceive digital video clips. In this light, it is surprising that none of our participants had taken their models of use for short video clips from public discourses. The participants did not mention capturing or publishing their videos in ways that fit the public discourse on personal and self-made videos, although some innovative uses occurred, such as filming one’s own theater rehearsals in order to improve one’s performance. These were again rather learned at work, during one’s education or from peers and not from public discourse. The motifs taken with the video functionality were rather according to the conventions of traditional snapshot photography and not mainly like typical videos [...found when browsing through services such as] YouTube.
However, the public discourse about malicious uses of video cameras and risks associated with digital technology seemed to have had an effect on the critical issues brought up by the participants. The concerns brought up were the risk of losing one’s photographs and videos due to technical failures, the reliability of technical means of protecting privacy of pictures and videos in the Internet [...] (cf. Ahern et al., 2007), the fear of malicious use of one’s personal media, and the fear of Orwellian like institutions misusing the media and associated information.

Although much of the pictorial practices [comes from] traditional practices of snapshot photography or the “Kodak Culture”, there were gradual changes if compared to the practices of the film era. As [...] presented, the motifs that were clearly the result of [carrying] camera phones (e.g., instant communication, functional, and boredom pictures) were [either] not present in the film era, or if, then present to a significantly lesser degree. (Lehmuskallio, and Sarvas, 2008: 261–2)

These gradual changes point to uses that the researched come up with during their everyday. One of the interviewees, for example, took a picture of her dog in order to be able to explain better to others what kind of dog it is. This rather banal example shows how words seem to fail in attempts to describe something experienced through vision, smell, and touch rather than verbal exchange. Here the desire for a technique to represent the seen and transmit it to others is met with camera technology in a form that seems more suitable than speech or other communication media at hand. Similar examples were brought up especially from work contexts, in which some of those interviewed had used camera-phones to depict, for example, machines that are broken, with a special emphasis on the broken part, for purposes of getting further advice from colleagues at a distance. The possibility of using picturing devices to transmit the seen in space is taken advantage of. Here images are means of expression, enhancing and facilitating bodies’ communicational repertoires.

A special means to prepare her children for a life of cameras was raised by the interviewee who filmed her children ice skating. She stated that this is done because the children should learn to see themselves through cameras. She had had an experience of being surprised after seeing herself on film and wanted to keep her children from having a similar experience, especially in an era when one is likely to be filmed many times in
the course of one’s lifetime. This form of preparing to live in a “cam era” was described not as something negative but as one of the things she considered her children to have to learn. The idea had come to her from her work, where she helps in rehabilitation of people with severe body problems. Those rehabilitated are filmed to capture the few moments when they are able to use their bodies effectively. This effective use of one’s body is shown to those rehabilitated several times on film in order to trigger similar embodied actions again, helping them to remember techniques of the body.

The examples of gradual changes in pictorial practices show additional ways of using cameras. The findings suggest that these additional ways complement a rather traditional “Kodak culture” and do not completely change non-professional ways of using cameras.

The “Kodak culture” as “fact”

The similarities in findings on snapshot photography practice from France (Bourdieu et al., 2006), the U.S. (Musello, 1979, 1980; Chalfen, 1987), Germany (Starl, 1994), the U.K. (Hirsch, 1997; Holland, 1997; Rose, 2010), and Finland (Ulkuniemi, 2005, and this study) suggest that special forms of snapshot photography have become translocal, shared among different people living far from each other. Richard Chalfen, at the end of his book on the “Kodak culture,” poses the question already referred to once:

If we find that similarities outnumber trivial differences for all groups studied, we should be prepared to take the construct of Kodak culture even further. Speculation and consideration must be given to the fact that inexpensive camera equipment, produced for non-professional use in contexts of home-mode communication, carries with it some form of “operating instructions” – instructions that somehow provide a model for appropriate behavior on a cross-cultural basis. (Chalfen, 1987: 163–164)

The question is relevant still today, with this study and others, mentioned earlier, showing evidence for a continuing visual order that patterns the ways in which snapshot photography is done. This study found that empirical examples of not conforming to the “Kodak culture” were actually quite scarce.
The “Kodak culture” is a shared pictorial practice found translocally. It is an example of a social idiosyncrasy mediated via images in effigy and images in corpore, similar to the social idiosyncrasy explored by Mauss (1973) in his reference to the similarity in women’s gait in New York and Paris, mediated via cinema. So how do novel technologies actually change picturing practices?

Kamal Munir and Matthew Jones show that snapshot photography has been worked out and maintained as fact through the creation of a specific infrastructure supporting the pictorial practice. Using the concept “enrolment,” they point to a process that made it possible to create a specific apparatus for maintaining and expanding the “Kodak culture.” The technical innovations for snapshot photography, backed especially by Kodak’s business model and patents on innovations, helped to create dominant designs that were difficult to question.

Thus, the 35 mm roll-film camera is a dominant design because of a chain of associations in which it is embedded and which constitutes the context in which it can remain dominant. In this context, film is cheap and widely available, cameras are simple to use and do not break down frequently, quick photofinishing services are widely available and affordable, and lastly, preserving memories as pictures and displaying them is a valued activity. It is important to note that the agents providing these services, or enabling this chain of consumption, as well as the consumers sustaining popular photography had to be persuaded in a process of enrolment, and that their participation was essential to the success and sustainability of the new concept. (Munir and Jones, 2004: 573 – emphasis in the original)

Following the reasoning of Munir and Jones, a variety of actors partake in the creation of the fact that is snapshot photography, including people but also roll-film, cheap cameras, and developing services. The technology that is used for snapshot photography is a black box for the end users that they neither understand nor have to understand. In doing snapshot photography, non-professionals can focus on the conventions and situations for photography and do not have to bother with how snapshot pictures are actually technically made.

The snapshot culture that Kodak influenced heavily was not George Eastman’s first target market in the late 19th century. After failing to address professional and
serious amateur photographers with his photographic inventions, Eastman discovered the mass market of non-professionals. His objective was inventing and patenting a complete network of processes related to mass photography that would be in his company’s hands. The invention of roll film, a roll-film holder, and the means for cheap and efficient film production and development were integral for building a mass market with easy-to-use cameras used in various social situations. Risto Sarvas and David Frohlich point out that Eastman’s capitalist machinery and the “Kodak culture” born of it was created with a clear objective in mind:

Eastman wrote about film photography in March 1889: “If we can fully control it I would not trade it for the telephone. …because the patents are young and the field won’t require 8 or ten years to develop it & introduce it.” (Sarvas and Frohlich, 2011: 55, citing Eastman)

The Kodak Brownie, introduced in 1900, can be seen as the camera device confirming Eastman’s vision. Already in the first year, around 100,000 Brownies were sold for one dollar each. In terms of usability, it was an improved version of the first Kodak camera sold from 1888 on, the Kodak No. 1. After the snapshot photographer had taken pictures with the camera, the whole camera was sent to Rochester, New York, where the film was taken out of the camera and developed, pictures were printed on paper, and the camera was loaded with new film before being sent back to the customer. (Cf. Sarvas, and Frohlich, 2011)

Although the advertising slogan “You press the button, we do the rest” had been invented already for the introduction of the Kodak No. 1, it was the relatively low price of the Brownie that made it a mass success. In 1905, already around 1.2 million cameras had been sold in the U.S., making the Brownie a true mass-market device (West, 2000: 41), a form of mass media (Dant, 2007). Snapshot photography thus became a mass phenomenon of user-generated content in the early 20th century, making it an important forefigure of current social networking and photo-sharing sites.

Nancy West maintains in her research on early Kodak advertisements that Kodak has done more than any other single enterprise or individual to determine the uses and expectations for snapshot photography, thereby also reshaping perceptions of such abstract concepts as memory and evidence. (West, 2000: xii)
Kodak used advertising in order to create imagined futures that consumers are willing to enter into, early on combining a specific synoptic order with a pictorial practice later aptly described by Chalfen as the “Kodak culture.” Sarvas and Frohlich (2011) point out that Kodak used advertisements on an unprecedented scale, so that the company and its products became widely known, suggesting uses of cameras that fit the new urban industrialized lifestyles lived out by modern individuals.

West distinguishes three phases in early advertisements between 1888 and 1932. Until 1900, Kodak focused on promoting play and leisure in photography, suggesting candid shots, travel photography, and the here and now of picture-taking. After 1900, the importance of the home and of domestic memories was highlighted, but snapshotting was still promoted very much as leisure activity. During World War I, photographs were used in confirming family unity, therefore being important for familial photography and creating visual narrations of family.

Kodak in particular and snapshot photography in general were thus able to connect to emerging socioeconomic conditions and gave people a way to express their situation in positive terms. Their owners having increasingly moved to cities and into nuclear family units because of education and work, cameras were, just as the car or later the radio and television, emblems of technical progress and bore the promise of making a right choice.

This turn to modernity, still influencing the “Kodak culture,” had an effect on disregarding earlier picture traditions such as post-mortem photographs (Ruby, 1995). Pictures of the dead did not fit into the ideal of using snapshot cameras in order to commemorate the good and pleasant, that which is still alive and triggers pleasant memories. Neither in my case study nor in the research of many others are pictures of unpleasant events to be found. One of the interviewees articulated this way of thinking about snapshot photos clearly:

Once I thought about taking a picture of one of my children, when he was little and had to go to the hospital. Because he was still very small, I pondered whether I should take a picture or not, but then I had the feeling that I didn’t want to have a visual memory of these kinds of unpleasant situations, so I left the camera at home. Whereas when I was in the hospital to give birth to my children, then actually quite a lot of pictures have been taken. So maybe you could say that if
something is negative, then I don’t necessarily want to have a memory of it.

The visual order, the gaze, suggested by the “Kodak culture” helps us in patterning our behavior with and in front of cameras, although the ways in which this is done seem to be gradually changing. Lately I have been to a deathbed and a few funerals in Finland where photos of the dead have been taken, increasingly with mobile camera-phones. Dead bodies are seeming to become part of snapshot photography again, since picturing devices are carried “always on.”

Prohibitions in snapshot photography

The similarities in the “Kodak culture,” in the “visual display of proper and expected behavior, of participation in socially approved activities, according to culturally approved value schemes” (Chalfen, 1987: 139) are not only suggested by business models and advertising but upheld as well with various prohibitions as to when and where to take camera pictures, how to share them, and whom to depict.

These prohibitions are upheld by mutual social conventions learned during enculturation into snapshot communication and taken care of by stakeholders in specific places, such as schools, kindergartens, swimming halls, restaurants, and concert venues. Legal regulations are enacted in order to ensure that camera pictures are not taken of unapproved and improper subjects.

The Finnish penal code (SDK, 1889), for example, regulates what kinds of settings, topics, and participants are closed to snapshot photographers. Privacy protection is assured by protecting domestic peace and outlawing illicit viewing with technical means. Within others’ homes and other areas considered to entail a reasonable expectation of privacy, such as fenced gardens and staircases in apartment buildings, as well as public toilets and dressing rooms, it is prohibited to record pictures with a camera. Here, already an attempt of illicit viewing is punishable.

Additionally, the public distribution of information considered private is prohibited if the act inflicts damage or suffering on the insulted, with exceptions related to general societal interest. Also defamation is prohibited, including that in pictorial form, with exceptions similar to the above.

38 For a recent research report on funeral photography in Finland, see Dutton (2011).
Specific topics are made illegal, such as creating and showing violent imagery that is considered especially raw, or creating or showing sexual imagery considered by the law to be obscene and indecent. Sexual depictions may not include children, sodomy, or violent sex.\textsuperscript{40} Exceptions related to showing raw violent imagery include filmic and artistic reasons, as well as showing the images for their informative content.

Intellectual property rights, such as copyrights, trademarks, design rights (\textit{mallioikeus}), and patents, are just as well-protected, suggesting that everyday photographers enculturated into the “Kodak culture” explicitly do \textit{not} use methods similar to those found in the area of “culture jamming” and “adbusting” (discussed in the section “Culture jamming. Using images against images”), wherein especially many intellectual property rights are explicitly questioned.

Several other Western countries have similar legislation, with some countries, among them the U.S. and U.K., having in the last decade passed additional anti-terrorist acts. In some cases, these are interpreted quite strictly by officials who exercise executive powers, questioning people’s camera-photography of larger gatherings, police officials, railway stations, or surveillance systems, for example. The hierarchical observation, as discussed with the panoptic gaze, is tried to reserve to specific actors.

Therefore, whereas the “Kodak culture” describes a specific visual order that usually remains invisible to the general public, except during travel or at special events at which people take pictures, societal norms and legal regulations involve attempts to ensure that some participants, topics, and settings are not depicted at all, remaining invisible in the public sphere and remaining only accessible to the few, if at all.

With a wide availability of networked camera technology, the “\textit{apparent omnipresence} of the inspector […] combined with the extreme facility of his \textit{real presence}” is somewhat questioned. Many of the incidents of law enforcers trying to inhibit the non-professional use of cameras in public spaces have again been recorded with the help of camera technology secretly and are distributed or discussed on various Web sites.\textsuperscript{41}

\textsuperscript{39} The Finnish terms are “kotira uha” and “salakatselun kielto.”
\textsuperscript{40} Especially in view of widely reported pedophilia scandals, semi-public venues such as outdoor swimming pools have become especially careful in granting photography rights, with some prohibiting it in general. See, e.g., \url{http://omakaupunki.hs.fi/paakaupunkiseutu/uutiset/kuvaamista_maaumaloissa_huluaan_rajottaa_pedofilien/} (last accessed on July 13, 2010).
\textsuperscript{41} For example, \url{http://carlosmiller.com/}, \url{http://news.bbc.co.uk/2/hi/uk_news/7888301.stm}, and \url{http://www.urban75.org/photos/met-police-photography-advice.html} (last accessed on July 13, 2010). Pauline Hadaway (2009) discusses the ways of policing the public gaze in the U.K., especially the various
Conclusions

The digitization of non-professional camera use provides for novel possibilities, which are at times celebrated. Various examples are reported in mass media, as well as in related research. This process of technical change is still in flux, so novel pictorial uses have not become consolidated, and earlier forms of pictorial snapshot communication continue to be important. Mobile camera-phone producers, as well as picture-sharing sites, suggest novel uses, but this empirical study shows that these technologies are still used as well in conventional ways, making them part of the “fact” of the “Kodak culture.”

As 12 of the 13 interviews indicated, enculturation into the “fact” of the “Kodak culture” has for them stronger agency for pictorial practices than do the novel possibilities provided with networked cameras. In this context, the exceptional conduct of the older adult is interesting, because she started to use her mobile camera-phone in ways similar to those described in related research on mobile camera-phone use. The affordances of networked information and communication technologies worked as a medium influencing her embodied perception and changed the ways in which she thought about camera images. She learned, as she explained, to perceive the world in novel ways and to make taking and sharing pictures an integral part of her everyday life. She did not take part in the reproduction of classical Kodak-culture pictures and used her camera device in novel ways. Also here, marketing, business models, legislation and public debates in mass media will have additional effect on the ways in which networked camera technologies will be used in the future. How much these kinds of practices will become “facts” similar to the “Kodak culture” remains an interesting future research question.

Interestingly, all who were interviewed believed that they would be taking more pictures in the future. Since their use of networked cameras is conditioned by traditions developed for and within film-based mass photography, it is too early to say whether networked cameras will have agency in changing non-professional picture use more profoundly, replacing the “Kodak culture” described. This requires further empirical research. But it might be assumed that, also in the near future, the participants and the settings and topics for camera pictures will remain similar, at least for those upholding a

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bans on photography and videography in public spaces. Whereas most of the bans have good intentions, she maintains that the opportunities for casual citizens taking camera pictures are ever more diminished,
specific gaze. Birthdays, weddings, travel, and having a child are for many so closely associated with camera pictures that it would be a surprise if camera devices and pictures taken with them were no longer to accompany these situations.

Novel uses brought by the digitalization of the technical infrastructure for camera pictures will nevertheless – also in the future – raise questions of boundaries between the public and private, of the appropriateness of the pictures taken and distributed, and of our relations to being ever more depicted. The fairly unspectacular everyday images taken in this empirical case study provide evidence for assuming that these boundary shifts do not occur abruptly, although individual cases brought to public attention seem to suggest otherwise.

especially as more and more people become suspected of pedophilia or terrorism.
Dealing with privacy in online picture-sharing

The findings from the first case study show the importance of an older pictorial practice called the “Kodak culture” in the use of networked cameras. In the study, cameras were used also for other purposes, such as for instant communication, for taking functional pictures of things to buy or repair, or to depict oneself or others performing in order to enhance techniques of the body.

One of the major areas discussed in relation to uses of networked cameras pertains to the conventions for privacy and publicity in pictures’ taking and sharing. What kind of pictures can and should be shared publicly? Which should be kept private, and what kinds of acts would we like to see never depicted? While some have lamented the widespread publication of pictures they consider to belong to a private sphere, others see empowering potential, especially in the act of publishing private material publicly (e.g., Koskela, 2004).

This discussion comes to the fore especially since non-professional picture use is linked to giving special agency to photography’s indexical character. Photography’s trace character and the automatisms involved in creating photographic images are a major reason behind many non-professional photographers’ understanding of snapshots as authentic presentations of those depicted. This understanding is extended at times so much that in several cases photographic pictures shared with the aid of online services have been treated as if they were not binary code that could be reassembled on screens via software but actually something containing the people depicted. These pictures are therefore, in line with the discussion of the boundaries between private and public, treated with special care. Mitchell aptly suggests that images are alive, not because they objectively would be but because we act as if they were: “The best evidence for the life of images is the passion with which we seek to destroy or kill them. Iconophilia and iconophobia only make sense to people who think images are alive” (Mitchell, 2005b: 93).

Indexicality as an affordance, activated in pictorial practices of the “Kodak culture,” is used in distributing selves into pictures and in treating photographic pictures in non-professional use as if they were alive.

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42 This section is based on and extends previously published work by Lehmuskallio (2009a) and
The ways in which camera pictures shared on online photo-sharing sites are treated need to be studied empirically. What kinds of fears do people who share their pictures publicly have? What kind of strategies for boundary regulation do they employ? Why do some share all of their pictures publicly?

In order to understand how people use networked camera technology when sharing pictures, empirical case studies have been conducted with fairly regular users of social networking sites. This chapter includes a joint analysis of two empirical case studies, both focusing on users of the Finnish photo-sharing site Kuvaboxi. Here two data sets are combined and analysis focuses on user views and practices related to privacy.

This study provides empirical findings pertaining to users’ privacy considerations in photo-sharing, their strategies for maintaining boundary regulations, and their reasons for sharing publicly, as well as a list of unresolved conflicts in photo-sharing. In contributing to the growing body of literature on the subject of online privacy issues, the chapter’s presentation of a wide range of user comments has the further aim of providing material for future comparisons of different technologies with regard to privacy issues, a feature lacking in current online privacy studies (cf. Iachello and Hong, 2007).

Although those interviewed tend to be selective in the kinds of images they capture and share, some users have started to create proactive strategies for coping with the increasing use of cameras and their networked character. Here the indexicality in camera pictures, which is especially important when one treats photos of people as if they contain parts of those depicted, is neglected. As will be shown later, this neglect is hard to maintain on a larger scale in social interaction and on a societal level.

It has to be kept in mind that the study of user perceptions and practices is not sufficient for acquiring an understanding of all boundary shifts that occur because of the use of networked cameras (cf. Pscheida and Trültzsch, 2009). Not all potential privacy-related conflicts are generally detectable by users of specific technologies, since users often possess insufficient knowledge of the technologies employed, the different stakeholders involved in maintaining specific technologies, and the legal regulations and rules framing technology usage. People use specific devices as media for actions and are often not interested in all aspects involved. The “thingness” of networked cameras has to be worked out separately, as done from one perspective in “A brief history of converged

Lehmuskallio, Tamminen, and Johnson,(2009).
techniques,” and will be done reflecting the findings from these empirical case studies later in the section “The digitally networked “cam era.””

Studying online photo-sharing

Photo-sharing has received increasing attention with the advent of user-centric design methods in the information and communication technology industry and change in the traditional business models of the photographic industry. Whereas non-professional film-based photography has been studied mainly by social scientists and humanists (e.g., Bourdieu et al., 2006; Chalfen, 1987; Starl, 1994), non-professional digital photo-sharing has been the province of designers and computer scientists. Particular attention has been lavished on mobile camera-phones, especially in the relatively young field of human–computer interaction (e.g., Mäkelä et al., 2000; Koskinen, Kurvinen, and Lehtonen, 2002; Okabe, 2004; Spasojevic et al., 2005; Van House and Davis, 2005; Van House et al., 2005; Kindberg et al., 2005), and, more recently, on online photo-sharing sites (e.g., Miller and Edwards, 2007; Van House, 2007; Ahern et al., 2007; Lam and Churchill, 2007).

Public access to photographs has made research into non-professional online photo-sharing, in particular, somewhat easier, since images and their metadata are readily available and open to study in line with various criteria. The photo-sharing site most usually examined is Flickr, a massively multiplayer online game later turned into a social networking and photo-sharing site (cf. Cox, 2007).

However, studies of camera-phone and online photo-sharing usually lack contextualization of individuals’ public sharing with regard to their other ways of using images. Generalizations also led to the specificities of different photo-sharing sites being ignored. This might easily obscure the reasons for variation in findings among empirical studies, especially in relation to why a colleague and I conclude a paper based on the previous chapter by saying that “we suggest that mobile media creation and sharing technology has only gradually changed people’s snapshot photography and videography practices” (Lehmuskallio and Sarvas, 2008: 257), whereas others state, “We believe that our Kodak Culture people represent a large and underserved photo-sharing population” (Miller and Edwards, 2007: 356).

Most studies of photo-sharing acknowledge privacy issues, since these seem to come to the fore in most interviews. Miller and Edwards (ibid.) identified two types of
Flickr users, those, in line with the first case study, who continue non-professional photography as a form of home-mode communication as already described by Bourdieu et al. (2006) and Chalfen (1987), sharing photos mainly privately, and people who share photos publicly in order to sustain online relationships that are based on photo feedback and discussions. Cox (2007: 10–11) suggests, after having included the history of Flickr as an online game in his analysis, that Flickr is inadequate for fulfilling the needs and practices of amateur photography, since it is oriented rather more towards social networking and blogging. Although further maintaining that Flickr serves a variety of photography-related activities, Cox nevertheless refrains from expanding on this topic. This suggests that the duality proposed by Miller and Edwards should be broken down further. Liu et al. (2008) provide an analysis of these diverse picture practices made possible by online photo-sharing, in their case also making a study of Flickr. Petersen (2008) adds to these analyses, discussing the picture practices of Danish Flickr users as “common banality” in investigation of how and why active Flickr users depict what he calls the mundane and banal situations of everyday life.

Recently, a few empirical studies have started to focus solely on privacy concerns, related perceptions, and ideas for protections in photo-sharing. Besmer and Lipford (2009, 2010) focus on the privacy concerns of Facebook users where photo-sharing is concerned and suggest design implications especially based on the photo-tagging feature implemented. Dong-Hoo Lee (2009) has studied 20 Korean camera-phone users in their early twenties and shows some of the concerns and strategies of those studied in regulating their interpersonal boundaries. Viégas (2005) has presented more holistic findings on bloggers’ expectations of privacy and accountability, describing bloggers’ tactics in regulating boundaries, as well as conflicts that have arisen from publishing of unsuitable material online.

Recent studies (e.g., Lehmuskallio, Tamminen, and Johnson, 2009; Tamminen, Lehmuskallio, and Johnson, 2011; Lampinen et al., 2011) have started to document some of the privacy-related conflicts on social networking sites, conflicts that have cost employees their jobs, for example, and these analyses provide a jumping-off point for discussion of privacy issues in wider frameworks.

This section focuses explicitly on ways in which sharing camera pictures is regulated by the users’ themselves on a photo-sharing site. In contrast to previous
studies, I focus both on specific material mediations in using a particular photo-sharing site, as well as the reasons given for pictorial boundary regulation.

**Methodology**

The study relies on empirical data focused on the photographic practices of 23 non-professionals all making use of Kuvaboxi, either sharing or receiving photos via the service. Individuals maintaining the service, the service providers, were interviewed also, on two separate occasions.

Studies were carried out on 13 people between November 2006 and March 2007, and 10 between February and April 2008. Both times, service providers too were interviewed. Kuvaboxi’s public sharing feature was introduced in the summer of 2007; some of the users interviewed before this used other sites to share their photos publicly (such as Flickr). For the purpose of this section, I analyzed again all interviews between May and June 2009, focusing particularly on fears related to privacy, users’ privacy strategies, reasons for sharing photos publicly, and unresolved conflicts, with the aim of obtaining a broader picture of privacy-related issues in online photo-sharing. The names of all those interviewed have been changed, to ensure anonymity.

The service studied, online photo-sharing site Kuvaboxi, had 261,500 users and hosted 11,946,117 photographs as of June 2009. The photographs are stored in 373,328 folders, of which around 9.5% are publicly accessible. The site is a relatively rare example among Web 2.0 applications: it has been developed iteratively with input from academic research projects, with several publications documenting the state of the system, findings from user studies, and design implications (all documented and discussed by Sarvas (2006)). The first prototypes built (Mobile Media Metadata (version 1) and MobShare) were developed mainly with mobile-camera-phone-based sharing in mind, whereas more recent versions, PhotosToFriends and later Kuvaboxi (KB), included Web-based sharing via PC terminals (see Figure 20). Since user studies had highlighted the importance of sharing photographs privately with selected peers, as well as perceived privacy threats related to public sharing on the Web, Kuvaboxi operated without a public sharing function until the summer of 2007 (according to Heikki, a

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43 The empirical data has been collected by me and Tiina Neuvonen, who analyzed the latter data from her perspective for her M.A. thesis (Neuvonen 2009). Neuvonen kindly agreed for me to use the data she collected for reanalysis. Findings from the first study have been published (Lehmuskallio and Sarvas, 2008; Lehmuskallio, 2009b).
maintainer of KB). By this time, Flickr had already gained popularity as an online photo-sharing site, with a large number of photographs shared publicly. In contrast to Kuvaboxi, Flickr limits the sharing of photographs dynamically with selected others, since only four main categories exist: photos can be shared with oneself, friends, family, or a general public. This makes boundary regulation more difficult, since the social organization of individuals into groups that photos are shared to is usually more varied. This approach can be explained by looking at Flickr in its early stages, when it was a massively multiplayer online game that was played through a browser called Game Neverending. Later, the game was dropped, but Flickr’s features still encourage sharing and communication in terms of its four broad categories and, thereby, crossing finer-level group boundaries, especially through the use of metadata (cf. Cox, 2007).

Kuvaboxi, on the other hand, was initially built for people wanting to share photos privately, and to keep control of the kind of material shared and with whom it could be shared. It is still constructed around a hierarchical system, giving the person who shares content in folders primary rights for removing and editing the photos shared. Each person to whom photos are shared can add comments to specific photos, but can not forward the photos directly. This assists in controlling the “lives” of photos, although taking screenshots, for example, cannot be prevented.

Kuvaboxi has two main features designed to promote trust, user control, and responsible photo-sharing. The first is the need to sign in with a cell-phone number, with an SMS message sent as confirmation. The second is the facility to decide explicitly with whom specific photographs may be shared (a feature known to most users from e-mail programs permitting the selection of recipients from an address list). This enables users to predetermine the recipients to be engaged in communication without encouraging the
crossing of group boundaries. The main users of the site remain those identified as target
groups in early user studies: people between 24 and 35 years of age and their parents,
who are usually between 50 and 60 years old (Jaakko, a maintainer of KB). Younger
users are expressly let to other venues, such as IRC-Galleria and Habbo Hotel, two
popular social networking sites used in Finland mainly by children and teenagers.

New features were introduced when the service was opened to public sharing. MTV3,
Kuvaboxi’s owner, began to advertise its television programs by creating
photograph folders on Kuvaboxi, with content ranging from Big Brother episodes to
Meidän Häät, a wedding-themed series. Common to many of these commercial folders
is the promotion of television programs made predominantly with user-generated content.

In Big Brother, volunteers live together in a house equipped with microphones and
cameras, competing for a prize they can win if they garner enough audience votes. In
Meidän Häät, couples get help from wedding professionals in arranging their big day. The
price participants pay in order to feature in these television shows is that their actions
(living in a house or celebrating their wedding) are turned into TV content. In a similar
move, many photo-sharing sites retain a right to use the material transmitted via their
software. Here the “Kodak culture” and the synoptic gaze discussed earlier merge, at
times in unforeseen ways.

Folders containing other MTV3 television program content encourage users to
follow these programs as well. Access to this type of publicly shared content gives users
further ideas for photos to take and share. Competitions, an online photo school, and a
Kuvaboxi community newsletter sent to users’ e-mail accounts are additional features
encouraging public sharing of user-generated content. The competitions are organized by
the Kuvaboxi staff, third parties (such as a photography magazine), or Kuvaboxi users
through a technical feature provided for this purpose. The online photo school is
dependent on an active user community exchanging advice, and also on the editorial
staff of a photo magazine. The biweekly community newsletter gives hints on suitable
subjects for images and the images of interest on Kuvaboxi, information about new
competitions and topics addressed by the photo school, and answers to frequently asked
questions regarding the site.

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44 In the meantime, since the first publication of work presented in this section (Lehmuskallio, 2009a), the
Kuvaboxi service has merged with another large photo-sharing service, and the merged entity is called
kuvat.fi. Additionally, the U.S.-based service Facebook has in the meantime had a huge impact both as a
Findings

Privacy – a fuzzy concept

In study of users’ attitudes towards privacy and their concepts of what privacy is in the first place, it quickly becomes apparent that the definition itself is, for many, quite unclear. Definitions of privacy range from “Well, privacy means that no one just enters the front door of our home.” to “I haven’t thought too much about that.” Nevertheless, privacy is an important aspect of users’ contemporary life. As one interviewee put it, “A private sphere is holy to me; only specific people can enter it, and what’s inside it is not shown to anyone. This includes the home, family, and friends.”

It is difficult to give a comprehensive answer as to whether privacy is inherent to humanity, as some anthropological models suggest (e.g., Altman, 1977), or mainly a question of decisions and values, not least because of the varying perceptions of the nature of privacy, both in terms of lay answers and within the professional field. I will not review the various discussions of privacy and publicity here; for an overview, see Marx (2001) or Bylund et al. (2010).

The importance of privacy can be followed in the discussion of Bennett and Raab (2006), who argue that privacy facilitates a self-realization that gives people control of their own life. Instead of being mainly an individual right, it is a collective and egalitarian value (Regan, 1995; Bennett and Raab, 2006) that provides freedom of association and speech without forcing every utterance made to be tested by governing bodies and their possibly arbitrary power. Furthermore, privacy provides the backdrop for a public realm in which public issues may first be discussed with people who share commonalities rather than differences, before they enter the political public realm. Privacy inhibits discriminatory practices arising from sexuality, ethnicity, religion, political views, and a host of other causes when these issues are not automatically included in public discussions and decisions.45

Asserting the “right to be let alone” (Warren and Brandeis, 1890) is one of the major ways in which individuals can protect themselves against the panoptic gaze discussed earlier. The question of privacy, and how synoptic and panoptic gazes merge

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45 For further discussion of privacy and online environments, see Bylund et al. (2010) and Tamminen, Lehmuskallio, and Johnson (2011).
in online environments when used as a nexus for intimate, private communication, is of special interest.

**Fears regarding privacy**

Despite the difficulty of arriving at a definition of privacy solely by looking at the user interviews, it should be mentioned that those interviewed cited a fear of various scenarios involving loss of personal privacy. Some of these concerns are hypothetical, usually absorbed via coverage in mass media, whereas others are a result of direct experience, either personal or that of close peers. Common to all these scenarios is that the fear is tied to losing control of something considered valuable, be it third-party surveillance of one’s entire set of actions and the attendant inhibition of self-realization or images of one’s bathing child ending up in the hands of pedophiles, or criminals successfully phishing for credit card details and using the information to empty one’s bank account.

Below is a list of the main concerns, followed by strategies revealed by interviewees for coping with these concerns. The major concerns are grouped into four distinct categories:

1) misuse of one’s data by someone else,
2) revealing too much information about one’s life,
3) concerns related to the effects of the technology used, and
4) concerns related to the business models of service providers.

**Misuse of one’s data by someone else**

A major concern referred to repeatedly in the interviews is that someone else would misuse one's data, whether companies, criminals, or people one knows well. The misuse might be intended or unintended.

*Companies misusing one's personal photographs.* In the first case, the concerns are related mainly to earning money with someone else’s work without permission.

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46 The state was not mentioned in the interviews, which seems to be in accordance with the trust displayed by many Finnish people towards the state.
That would be outrageous, if my photos ended up in advertisements… Someone making money with stolen photos. (Anna)

Sometimes I’ve been wondering when amateur photographers post their incredibly good photos publicly: how can they be sure their photos stay with them for the next 10 years and are not used (without permission) on postcards or in other places? But I do understand them, that they may want to get feedback and other stuff, so possibly it’s not that important for them. (Maija)

**Criminals misusing one’s personal photographs.** Other concerns are related mainly to people using photographs for actions not tolerated by the interviewee (and society in general by law).

You might just post an innocent photo of your child taking a bath, in which the child sits innocently in the bathtub, and then the same photo might end up on an obscene site. […] Bathing photos are so wonderful because the child is so clean and everything else, but then if it’s a stimulus to something sick, that’s something I don’t want. (Kati)

**People one knows using one’s photos in an unsuitable manner.** The final case might occur unintentionally, after posting of photos publicly or for selected recipients, or intentionally, for the purpose of bullying.

The godmother of our elder son had posted his photos there [a public photo gallery on the Web], which surprised me. Everybody could access photos that were in a way from our personal photo album, and I had never thought about this. Later I realized that it was not necessarily that serious, but she should have asked permission to do this. (Heidi)

Even when photos are shared only among those who were there when the photos were taken, some might be offended, thinking that they do not look good or presentable. (Heikki, a maintainer of Kuvaboxi)

There have been cases of bullying where photos of an ex-girlfriend have been shared publicly and the ex-girlfriend has called the
administrators of Kuvaboxi obviously upset and crying and asking for the photos to be removed. (Kuvaboxi maintainer Heikki)

Revealing too much information about one's life

A further major concern is that one can let slip too much information, such that important peers get to know things about one's life that one would rather they not. Criminals might also obtain hints on when and how to steal personal property.

*Important peers getting to know aspects of oneself previously not revealed to them.* This might lead to unwanted social situations, such as losing face in front of one's peers.

I can't publish all of the photos I'd like to on, for example, IRC-Galleria. I'd like to laugh at them with friends, but I just can't put them there. This ensures that my colleagues can't go and look at the photos. And some of my photos are rather emotional, and being a man, I wouldn't like to show this side of me to everyone, especially not to our bunch of guys [his friends]. (Jarkko)

*Posting too much personal information on the Web.* Another issue recognized is letting, for example, criminals know when to rob your home.

On Facebook, especially, I have the feeling that I might be revealing too much information about myself. Someone just reminded me of that because I have my home address there as well. (Anna)

Well, on Kuvaboxi, one of the other users said (in a comment) that he's going on vacation, and I thought, “Well, let's see what I can find out about him on the Internet.” I found a surprising amount. In about five minutes, I knew loads of background information about this person, where he works, where he lives, etc. If I were an evil guy planning a break-in, this information could be fatal. (Antti)

Concerns related to the effects of the technology used

A third major concern is directly related to the technology used, to the ways in which images in effigy are mediated. The concerns range from the effects of an ever more technological society on individuals in general, through technical failures in taking,
The effects of an ever more technological society on individuals. The personal effects of proliferation of a technological society are tied to the supposedly alienating effects of technology use, as well as the new forms of being that they imply, as in being continuously depicted or recorded by other means. The latter concern is related to Orwellian ideas of state or market officials potentially misusing private data, and to individuals having to learn to discipline themselves in front of recording devices, since they cannot be sure where the images and sound recordings will pop up again.

I do have the feeling that Finns are withdrawing more than ever, that a real communality is disappearing. Nowadays all even students want is a single-room flat, and I find this very weird […]. Humans are social animals. I wouldn't want that. And people are spending their time on the Internet instead of actually meeting each other. (Anna)

All the surveillance cameras that are in stores and everywhere, in hospitals, in a doctor’s reception area, in pharmacies – you have them everywhere. And it’s clear that you need to have them, but not one of us knows what these cameras entail if, for example, they record sound as well, and you talk about anything. […] And there might be hidden cameras that take photos […] that’s somewhat frightening and it’s not always clear where the moral boundary lies. But it seems to be the trend that you just have to adjust to having cameras around everywhere. (Pirkko)

Technical failures in the technologies used for taking, storing, and sharing photos. Concerns about technical failures are voiced for all parts of the imaging process, and usually they are related to something special that would be (at least partially) lost:

A fear I have is that the photos I currently have on our computer somehow get lost or destroyed. That the computer breaks down or and doesn't work. I’m actually quite stressed because of this, because there are so many photos, over two thousand that I haven’t yet printed out, and what if I don’t have the time to get them all printed before
something happens? That everything I have captured just gets blown away. (Heidi)

Another issue is that of accidents happening to people when they use picturing technology:

Well, if you, for example, take photos with your cell phone or digital camera and you send them to yourself via e-mail, it might happen that they end up somewhere strange. (Pirkko)

Concerns related to the business models of service providers

A fourth major concern is related to service providers and their business models. In a few interviews, the longevity of photo-sharing services and their reliability were questioned in particular. One scenario cited was service providers closing their service down and not granting users the opportunity to retrieve their data first:

You shouldn’t keep an online service as your archive. You can’t trust them, because they might be closing down at any time. (Oskari)

Service providers not being reliable and someone misusing personal data for identity theft was another concern expressed. Two related excerpts from interviews are the following:

[S]omeone managed to phish my credit card details somehow and bought a cruise in the Caribbean, but that’s the only thing that’s happened to me. (Oskari)

On the one hand, you can hide your profile, but I’ve been wondering about that thing when you open an application and it often reads “access my information.” Then I start to think: does the company who has built an application really get all of the information from me? (Anna)
Users’ privacy strategies

It is often easy to find real-life examples for all of the four major areas of concern brought up in the interviews and it is therefore understandable that users have found several strategies to cope with these insecurities, although few of the concerns become reality for any one person and it seems safe to assume that tangible confrontations are rare. Furthermore, not all concerns were voiced by all interviewees.

The first two major concerns in particular – misuse of one’s data by someone else and one revealing too much – are matters related to the controllability of personal boundaries, having to do in this context with the question of how in social interaction images in corpore are translated, with the aid of cameras and online sharing services, into images in effigy. In accordance with the discussion provided earlier on “face-work,” as a means to regulate the ways in which images in corpore are translated to images in effigy, also Irwin Altman (1975) has suggested that people always need to regulate their boundaries and that in different situations, with different people, and in different cultural contexts, the level of boundary regulation desired varies. If an outsider is able to misuse personal data, the outsider intrudes into the personal sphere and thus invades personal privacy. The “personally defined ideal level of interaction that a person or group desires” (Altman, 1975: 27), in these cases does not match the outcome, or the feared outcome. Here we see examples of misaligned input processes. These outside stimuli range from “none” to “becoming unbearable.” In the second case, in which those interviewed were afraid of revealing too much, they were fearful of losing control of personal outputs, even if the outputs are images in effigy. Again, the level of interaction personally desired does not match the (feared) outcome. This regulation in face-work is looked at closer in the discussion on “Indexicality as an affordance in photo sharing.”

It is important to note that users have various and sometimes conflicting strategies for face-work and boundary regulation. All those interviewed had such strategies; even those sharing all their photos publicly regulate their boundaries. Differences exist in what the interviewees understood to be intimate, personal, social, or public, to use Hall’s (1969) terms, and thus the ways in which they shared their photos.

Most of those interviewed were sharing their photos via online services, mainly via e-mail and various photo-sharing services (the majority using Kuvaboxi). The strategies

47 For a first elaboration of Altman’s work in new ICT environments, see Palen and Dourish (2003).
for regulating boundaries in order to achieve the desired privacy levels differed appreciably, ranging from tight regulation of what to share, with whom, and via which channels to sharing all photos publicly and ascribing to them only a modicum of agency or personal meaning. The strategies used cover the gamut from very controlled sharing to sharing everything publicly. Additional strategies involve using pen names, not publishing personal information on the Web, and asking permission for posting photos.

**Using Web services that seem trustworthy.** For many users, a known service provider, especially with a recognized brand, appears trustworthy, particularly if the service is domestic. This is explained, for example, by the Finnish mass media ensuring that any possible misuses are discussed, something that would not happen as easily with foreign service providers.

I do share my photos, especially from travels and festive occasions. These I show others. Everything I take photos of I show others as well, people who are close to me. I am so cautious I haven’t yet had the courage to put these photos on IRC-Galleria. By not doing so, I know that the photos stay in relative proximity. (Kati)

On the Internet, it always depends. For example, a service from MTV3 is always more trustworthy [than others]. If a service is not that known, then I don’t like to use it for sharing. (Oskari)

**Not uploading photos to the Web that could become problematic in the wrong hands.** Exercising restraint in what one publishes online is done especially to prevent potential for misuse by others.

Let’s put it like this: the photos that I don’t want to get published in other places I don’t even upload to the Web. (Antti)

I’ve been following a bit what happens on the Web, and that’s exactly why I don’t upload any photos of my daughter, for example. Nor do many others upload photos of their children, because they know that there might be those kinds of people. Because you don’t see what they do to the photos and how many take copies for themselves. (Susanna)
Not sharing photos publicly at all.

Question: “Why is it you don’t want your photos to be shared publicly?”

Answer: “I don’t know what it is. It is just that I don’t want to do it. Maybe it’s what I take photos of, that they involve people who are so important to me that I don’t want to share them publicly. And take, for example, a dog. Well, a dog’s photo I could possibly share publicly, but somehow I just don’t want to do it. It’s that kind of private boundary that I don’t want to show it to everyone. I can’t explain it that well: why I don’t want to share my photos publicly.” (Elina)

Giving access rights to specific people, not to all.

I thought that I should be better able to protect my content […]. I noticed this when I included a work colleague and imagined that she had tighter protection from content than others, my real friends [laughs]. But then I noticed that she saw my applications when she commented on a book that I had been reading. I had to exclude her from my account because I don’t want some of my work colleagues to see what movies I watch or what books I read. (Anna)

Publicly sharing only photos that do not include people.

We have made a homepage for our dog, and there we have photos (of the dog) that are publicly available. That’s what I can use without worrying. We aren’t going to make a homepage for Tuukka (our son); the photos would be more difficult. But I’ve been thinking that I could make a privately shared Web page of Tuukka that only specific people could see it. Using it a bit like Kuvaboxi. (Milla)

I have thought along the lines that when they’re older my children can share their own face with whomever, if they want to, but I haven’t let that happen […]. I’ve let them stay just plain, ordinary people and haven’t thought sharing these photos to be necessary. (Kati)
Publicly sharing photos only of people who are public figures anyway.

It depends on what kind of photos you share. I don’t see it as positive to share my family life. But if I’d have photography as my hobby, this seems to be a good channel for getting quick feedback. But it seems that the boundary lies between family life and people in general. Unless you take photos of people who are in public life anyhow. (Maija)

Sharing only specific kinds of photos of people publicly.

I wouldn’t want to share photos of me or my friends [publicly …]. I’m very self-critical; it’s very difficult to get a good photo of me […] that’s why I wouldn’t like to show my photos to everyone. If it’s a good photo, then it doesn’t matter […]. And it doesn’t really bother me […] if some Japanese see my face there, then it doesn’t matter. So what? Everyone on the street sees my face anyway, so it doesn’t really matter. (Anna)

Sharing all photos publicly. Although some interviewees shared all their photos publicly, they again distanced themselves from other public sharers through complaining, for example, about sexually charged photos.

It would surprise me to see my photos somewhere else, because I don’t really think that too many people would look at them. I don’t feel that we’d be such interesting people that someone would want to look at our photos. […] On the other hand, if someone wants to look at our photos or print them for personal use, it doesn’t bother me. A photo is not an extension of me; it’s just surface. (Tiina)

Prepare one’s surroundings for depiction by cameras.

It has been quite nice to have videos from hockey games to show my sons, so that they can see when they’ve succeeded. And maybe they’ll also learn what it looks like when they’re filmed. I remember when I myself started to do sports more seriously: my trainer showed a video
of me on television and it was terrible to see myself. So I hope my own children won’t have this experience but that they’ll learn to see themselves through the eyes of others. (Taina)

Different users regulate their privacy boundaries very differently and ascribe to images different kinds of agency. The findings show that all those interviewed regulated their boundaries, but how this happens varies from one user to the next. Moreover, although some have experienced actual conflicts arising from sharing of photos, such as the person having to block her work colleague from seeing her account information, usually this kind of problem has been resolved either by regulating personal boundaries more strictly or by asking others to regulate their boundaries in a stricter way. If asking another person not to publish specific photos or to remove them from a site proved unsuccessful, the interviewee contacted the service provider, who is empowered to remove material directly or to ban access by specific users. This is also done in the case of unknown people publishing material, such as nude photos, that is considered unsuitable for Kuvaboxi.

These strategies can be distinguished into preventive and corrective strategies for boundary regulation, of which preventive ones focus on deciding beforehand what kinds of images to share with whom and corrective strategies are used after a problematic incident. Whereas most of these strategies are applied at the individual level, some of those interviewed did manage their ways of sharing collaboratively, discussing with relevant peers how to deal with photos shared via digital means. (Cf. Lampinen et al., 2011)

**Why share publicly?**

Photographs are taken and shared for a variety of reasons, such as taking photographs in order to extend one’s own memory or to gather material for personal or collective memory. Other important reasons include sustaining relationships by communicating to others through, for example, description of one’s activities or sending of photographs of events mutually experienced. Some perceive photographs to be especially suitable for reflection, in attempts to tackle questions of self, death, or extraordinary experiences, whereas others point more toward the importance of self-expression. Without attempting to judge why people in general take photographs, this section presents interview findings related to the reasons for public sharing, as well as issues emerging in regulation of the
boundary between self and other, an important question when one tries to ensure "correct" presentation of self.

Public sharing of photographs raises privacy issues and may generate potential conflicts. People nevertheless share their photographs publicly, though some more cautiously than others. The availability of technology enabling people to share their material privately by restricting access from the outside world poses the question of why users indulge in public image-sharing.

**Maintaining contacts.** A prominent reason for using online photo-sharing sites is to maintain contact with people who live outside the physical neighborhood. These might be friends, relatives, people met during hobby activities, and work colleagues. Interestingly, these sites have enabled some of those interviewed to regain contact with out-of-touch friends. Although many use private sharing functionality for this purpose, some, as mentioned above, do this publicly.

Question: “How did you get the idea for using Kuvaboxi?”

Answer: “It was definitely because of this child. I have my whole family up north in Simo [about 700 km north of Helsinki]. Maija’s relatives on her mother’s side live there, and, naturally, I thought of how to get them to be a part of the child’s life, and in a way that made it as easy as possible, of course. And when I knew the child was coming – we already had the digital camera – I found Kuvaboxi, trying to figure out how to share photos and videos via the Web, not having to attach them to an e-mail or anything.” (Maija)

Another answer: “It is awesome how people have found old friends (via other friends). In that way, it is actually rather nice.” (Oskari)

**Creating new contacts.** People find each other when sharing publicly, particularly when they have similar interests. Shared interests can be anything at all, ranging from being active in the same kinds of sports to having photography as a hobby. Feedback is especially valuable because it might be difficult to obtain in one’s immediate surroundings. For some interviewees, talking about difficult issues in the communities around public photo-sharing or other Web communities proved easier than talking about them face to face.
Sharing is really uplifting. And then I get feedback as well on what they think of my photos [...]. And at home I don’t get too much feedback. They just look and wonder what I’m doing again with a camera in my hands. (Susanna)

I exchange ideas with a few people on Kuvaboxi about what’s happening there, or then we just talk about this and that, about how things are going, nothing too profound. There’s even someone searching for a new man on Kuvaboxi, so you might find things like that as well. All of them with their own styles and motives. […] But now you find new communities of people who don’t know each other in any way other than from Kuvaboxi, which is actually a result of starting to share photos publicly. (Antti)

**Sharing publicly because it is technically easier.** The technical features built in to Kuvaboxi in providing private sharing, such as having to sign in by using one’s cell-phone number, while serving to enhance trust in sharing of photos privately, also make usage more cumbersome. People with non-Finnish cell-phone numbers sometimes run into problems with the SMS-based verification process, and others do not necessarily know the cell-phone numbers of people they would like to share photos with.

I share much more publicly […]. I have really a lot of public folders and only three private ones. But I do think that it’d change if I could share photos without the phone number; that could change a lot. (Susanna)

**Sharing publicly for recreational purposes.** Another important motive for public sharing is its use as a pastime, for entertainment and having fun. One of the interviewees initiated competitions and also has created several accounts that he was using rather differently, commenting on his own work and trying to be provocative in order to attract attention.

Question: “Why do you share publicly, when you say that you don’t receive constructive feedback?”
Answer: “Well this is like a form of entertainment, a pastime [...] and then a form of visual play, about having fun and joking around.” (Antti)

Others invent new forms of using the online photo-sharing service, such as creating a Christmas calendar for which they post photos every day before Christmas or collectively taking photographs of similar subjects and sharing these in a shared public folder.

Just last week, I was in Lahti taking photos and I had a step counter with me, and it recorded 26,000 steps, so it’s really not about staying in one place.

Question: “Do you often go somewhere expressly to take photos?”

Answer: “Yes. Going to Lahti was exactly that. And then with the other people on Kuvaboxi we did a shared folder of photos from Lahti. Was it Eeva, or who said it, that it would be nice to see how different people depict similar subjects? And then the people from Lahti gave me instructions on where to put my photos.” (Susanna)

Sharing publicly for practical purposes. Some of those interviewed wanted to share images publicly in order to relay instructions on how to take better photos or share knowledge in return that had been useful to them in the past. Images were also regarded as better for communicating how to fix an engine, for example, than it would be to describe the procedure via text.

It was quite nice since an old work colleague had been to South Africa and posted these photos. They were nice to look at, especially since I’m going there myself. And then another person, living close to Jyväskylä, had shared some photos publicly. They were really good, taken by a professional, so it was nice to look at them as well. (Anna)

Sharing publicly for monetary reasons. Some users have posted photos of things they are selling and attached a link from the online auction to a public folder. Amateur and semi-professional photographers in particular use the public sharing option when trying
to sell photos or their photographic services. Another reason for sharing publicly is getting paid for doing so.

I only share my photos privately, and I’d use a pen name if sharing publicly. Actually, I do have a few public folders that I’ve given to Kuvaboxi for advertisements. (Mikko)

Here business models enabling photo-sharing services come into play again. Pictorial interaction is often supported by commercial stakeholders with an interest in specific pictorial practices emerging and in creating an infrastructure of stakeholders supporting them. Non-professional camera use is more often than not enabled and supported by various commercial stakeholders having an interest in social relations being mediated via cameras.
Discussion

The findings resonate well with a more general discussion presented in a jointly worked on and published conference paper, that I draw here from in order to pinpoint important phenomena:

The tension between visibility and invisibility is especially noticeable in regard to [photo-sharing] and social network sites. Here a range of friends, colleagues, relatives and acquaintances have the possibility to share information with each other, add content to each other’s site and browse the existing networks of people in one’s own network. Even if you do not use these sites yourself, it is ever more likely that pictures and videos of you appear on other people’s profiles. Conflicts emerge when private messages are accidentally distributed publicly, people known from other societal contexts get access to delicate information not meant for them to see, data mining with possibly discriminatory consequences becomes possible, [and] third parties use the existing services for target marketing without the user’s explicit content, [to name a few common sources of conflict]. While a variety of the conflicts are intended or are accepted as “collateral damage”, especially unintended consequences call for a reflection on understanding how these come to be a larger matter of concern – for each of us. (Lehmuskallio, Tamminen, and Johnson, 2009: 2)

The rights to be let alone and to be included

Samuel Warren and Louis Brandeis (1890) claimed a right to be let alone at the end of the 19th century, a time when cameras were becoming more common and were taken to social settings, such as high-society dinners. Here people were not accustomed to being depicted. When these pictures were published in newspapers, a claim for a right to be let alone emerged. (Lehmuskallio, Tamminen, and Johnson, 2009: 5)

As we discuss this phenomenon it seems at first sight reasonable that the right to privacy, a right to be let alone, should be of the highest priority. Beate Rössler (2001) has argued that the reason we need privacy is in order to live a “free” and self-
determined life and it is in private where we can learn and try out what a free and self-determined life might be. She categorizes privacy into three dimensions, focusing on[...]: 1) informational privacy, regarding control of information that other people know about you (including state and market actors), 2) decisional privacy, regarding control of the decisions and actions that you are making, and into 3) local privacy, asking what spaces can [...one] actually control from other people.

While Rössler’s normative dimensions of privacy are extremely helpful in thinking about the topic, Irwin Altman’s (1975) definition of privacy as a boundary-control-process seems [...] rather applicable to studying how people actually “do” privacy on social network sites [(cf. Palen and Dourish, 2003; Margulis, 2003)]. Altman underscores an aspect often neglected in privacy-discussions, which focus usually on the “right to be let alone” (such as when considering privacy enhancing technologies (PETs) like better encryptions or when considering better data protection laws [(Langheinrich, 2001)].

Altman shows how situationally desired privacy depends on the success of interpersonal boundary-control processes. If the input level of external interaction is suited to one’s situational boundary regulation mechanisms, achieved and desired privacy overlap and no conflicts emerge. But if a person has difficulties in maintaining [...]her boundaries, the external inputs are considered to be intrusive and crowding occurs. If again the amount of inputs are insufficient, a feeling of being isolated may emerge. The same applies as well to the amount of output to others in interpersonal boundary-control processes.

Too much output may lead to undesired contact, [...] as with the fear that pedophiles might get hold of pictures of one’s child], whereas insufficient means for output may lead to social and societal seclusion. (Lehmuskallio, Tamminen, and Johnson, 2009: 6)

Preventive actions are used to balance out the need for a suitable amount of interaction, while corrective measures are used to regain it. The ways to use proper techniques in acting with the aid of novel devices have to be learned.
Thus being let alone is only desirable if you do not want to interact with specific actors in a situation, whereas letters, telephones, fax, e-mail, blogs and social network sites are quite often explicitly used to contact other people: friends, relatives, colleagues, acquaintances, company or state representatives or strangers using the same service possibly sharing similar interests. This calls for looking at privacy not only in terms of the “right to be let alone”, but also to consider the impact of a “right to be included” – whatever this inclusion to a specific individual means. Similarly this model is useful in showing that a rigid dichotomy between the private and the public is insufficient. What for one actor seems to be a private activity, such as telling other’s about one’s problems, might for another person be a regular part of public discourse debated on morning TV. (Ibid.)
Unresolved conflicts

The possibility of sharing photos publicly has raised issues related to appropriate ways of sharing photos, as well as fears regarding a loss of privacy. Users of photo-sharing sites have created strategies to ensure correct boundary regulation, and they have a variety of reasons they find public sharing to be useful and interesting, as shown in the findings. Nevertheless, unresolved conflicts remain, which are partially tied to the technologies used for sharing, business models behind online photo-sharing services, and the actions of those using these services.

ICT-mediated communication as materialized interaction. An affordance in current ICT-based photo-sharing architectures is that ICT-based interaction leaves traces that are editable and suitable for copying.

On the Web, it is inevitable, or at least you don’t have any guarantee that your photos won’t gain a “life of their own.” You can also order prints of public photos, and even if these kinds of tools were not provided directly, you can always take a screenshot of a photo. This means we can’t ensure that shared photos won’t diffuse via informal routes beyond the control of the service provider. (Heikki, Kuvaboxi maintainer)

You have to start with the realization that everything you put on the Net can be copied. If I write a poem, a thought, or a good business idea, I have to know that someone might copy it and use it for his or her own purposes. I have sometimes seen my own text and images in inappropriate contexts. (Antti)

Not reading the terms of use. Only one of the people interviewed admitted to reading the service provider’s terms of use, others maintaining that they just click through. This means users potentially accepting terms for photo-sharing that they wouldn’t accept if they knew about them.

I never read them [laughs]. Does anyone? […] I don’t think it corresponds to any written contract, so I don’t see that it has any relevance. And, anyhow, you don’t get further without clicking “I
accept.” So they only limit their own responsibility, but it doesn’t really relate to users. (Anna)

*What people answer in interviews is not necessarily what they do.* Usually it is difficult to be sure that the answers people give in interviews reflect what they actually do. In this case study, a contradiction was found as one interviewee stressed the importance of asking people for permission when taking and sharing photos of them but going through her photos made it evident that she was not following this rule herself.

Question: “But you have photos of people here as well.”

Answer: “Yeah, there are actually quite a lot. But usually it’s like people don’t want you to take their photo. Often, if you asked them whether it’s okay to take a photo of them, they said “no.” I have taken some of the photos by keeping the camera at my waist, so that they wouldn’t notice me taking the photos. My best photos have actually been taken like that.” (Anna)

*Advertising-based business models’ pressure for public sharing.* Public sharing of photographs makes it easier to carry out targeted marketing and count the number of users actually visiting the pages containing advertisements. Many advertisers still prefer a large number of people visiting a specific site containing their advertisement rather than having their advertisements on, say, several sites each with only a few viewers, as in private sharing.

Various competitions encourage people to share their photos publicly, and they actually have a strong effect on how many photos are shared in this way. In sharing of public photos, it is easier to advertise by targeting specific users, which brings revenue to the service. These competitions also draw over a million people to the MTV3 site, to which Kuvaboxi is attached. (Heikki, Kuvaboxi maintainer)

*Digital portability of one’s own data.* Users of online photo-sharing services wanting to switch to another service usually find it very difficult to get data transferred. To my knowledge, no photo service provides an export tool for the comments and networks
created around shared photos. Some services, such as Kodak Gallery, even retain the right to delete the content if the user fails to buy enough within specific spans of time.

Members may upload an unlimited number of photos to the KODAK Gallery website (Kodakgallery.com). Beginning March 13, 2009, our new Storage Policy states, however, that in order to continue storing photos on the Gallery website, you must make a purchase from the Gallery within 90 days of your first upload, and then every 12 months thereafter. […] If you do not meet the applicable minimum purchase requirement, your photos may be deleted.48

**Indexicality as an affordance in photo-sharing**

When one focuses on the agency of photographic images shared via an online photo-sharing site, the findings tie in well with a major discourse stressing the indexical connection between photographic pictures and what has been depicted (e.g., Barthes, 1989; Rose, 2010). Especially for film-based photography, there is a discourse of a truth claim to photography, photography having a somewhat privileged relationship to “nature.” Talbot’s “Pencil of Nature” is an oft-cited example of this (Stiegler, 2006). Here the technology itself is carried through its connection to an outer-world agency. The agency of the technology is often extended to the selves of those depicted, distributing technological agency to individual subjects and the ways in which they connect to the world. This is evident in responses expressing fear of losing a part of oneself if one’s photos get into the wrong hands.

But digital photography is highly mistrusted in this discourse: we have photo journalists asking for codes of conduct that address digital photos, people have been fired because of compositional modifications, and photo theorists ask whether digital photography should be called photography at all (cf. von Amelunxen et al., 1996).

The suspicion regarding digital photos has a lot to do with the technology used. Digital photographs are taken with cameras, and this connects them to a major film-based discourse of photos having a special relationship to that which is depicted. “Indexicality” and “traces” are here used to refer to the agency of camera technology.

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But the digitalized pictures again, which are formed with a camera, are stored as data (e.g., .jpeg, .tiff, or .gif), with various forms of (lossy or lossless) compression, and combined with metadata (automated and manually added). As Heidenreich (2005) points out, digitalized pictures are visible only if a program is used to make them visible in the first place. The digital image has a double existence, as a data set and as a visible picture. The digital images are never only images; they are always connected to programs that show, transform, and transmit them. There are a variety of programs that can connect to other programs in which pictorial information is only a part of more complex networks.

Mistrust in digital photos is possibly as well connected with ideas of digital images in early Internet utopias, where misrepresentations of oneself were understood as opportunities rather than morally precarious actions. In the online world, some thought, individuals would be liberated from their offline visual appearance and the necessary face-work therein. Anonymity, virtuality, and avatars were and still are important concepts related to this discourse (cf. Koskela, 2004).

Digital pictures thus are connected to networked hybrids, wherein the possibilities for picture use are not decided upon beforehand, at the time an application is invented. The digital pictures, once created, have potential to be distributed indefinitely, becoming interoperable with ever more software applications and interfaces, as well as data types. Similarly, these pictures are, as Latour (1993) stresses with his concept of the hybrid, constructors of the social, or associations. Human action is distributed into materially mediated constellations and enmeshed with hybrids. This is where strict boundaries between human and non-human actors become difficult to draw, especially since the artifacts at our disposal facilitate specific kinds of actions that are impossible without them. We distribute our actions with the help of pictorial media, and in doing so, we act situationally together with them, obscuring a clear distinction between human bodies and pictorial media.

**Face-work**

In online photo-sharing we have a major discourse on indexicality stressing face-work, one that provides a lot of material for discussions on the correct forms for maintaining privacy and publicity. Here, digital photographs of oneself (or one’s close peers) have a special relationship to one: in a way, the index affords the extension of one’s self, which
becomes part of the photos taken of oneself. Thus the agency of the camera technology is abducted to include the self of those depicted. We may recall one of the interviewees quoted above:

Question: “Why is it you don’t want your photos to be shared publicly?”

Answer: “I don’t know what it is. It is just that I don’t want to do it. Maybe it’s what I take photos of, that they involve people who are so important to me that I don’t want to share them publicly.”

It is as if the interviewee had read Goffman (1990: 245), who writes that the self, as a performed character, is not an organic thing that has a specific location, whose fundamental fate is to be born, to mature, and to die; it is a dramatic effect arising diffusely from a scene that is presented, and the characteristic issue, the crucial concern, is whether it will be credited or discredited.

Face-work is clearly important in the photos, showing that interpersonal boundary regulation as well as a separation of back- and front-region behavior is distributed to include camera pictures shared on the Internet. Extracts quoted above are illustrative here:

I wouldn’t want to share photos of me or my friends [publicly …]. I’m very self-critical; it’s very difficult to get a good photo of me […] that’s why I wouldn’t like to show my photos to everyone. If it’s a good photo, then it doesn’t matter. (Anna)

I can’t publish all of the photos I’d like to, for example, on IRC-Galleria. I’d like to laugh at them with friends, but I just can’t put them there. This ensures that my colleagues can’t go and look at the photos. And some of my photos are rather emotional, and, being a man, I wouldn’t like to show this side of me to everyone, especially not to our bunch of guys [his friends] (Jarkko)

Face-work separates front and back regions in social interaction. Depending on the audience, people take up face in specific ways, which is not done alone, or in similar ways when with other kinds of people. Face-work enables people to have multiple and
possibly incommensurable front and back regions. And face, following Goffman (2005), is “an image of self delineated in terms of approved social attributes”.

In his work, Goffman, who proved an important figure for studies considering non-professional photography, treats the body as a medium for images and therefore is concerned mainly with images in corpore.49 Both Belting (2001: 135–136) and Goffman underscore the social, symbolic dimension of images in corpore by referring to the etymology of the word “persona,” which denotes both social role and mask. “Persona,” or “person,” refers thus to the role an individual takes in society, and the appearance needed for this. A person is someone who creates a mask with proper attributes for taking up a social role. Accordingly, a “real face” is not a face that a mask is hiding but a face that the mask creates in cooperation with the body: a somatic entity. Putting on makeup and choosing clothing to wear for a social situation is a form of interaction in the service of the creation of an image in corpore, making the body a social being in the first place. The body prepared for sociality indexes situationally accepted shared values for other bodies and, thus, social competence.

Because of the relationship between images in corpore and sociality, the creation of a mask is a way of disciplining the body. In presentation of oneself via a mask, a stylized image of the body, a person is created that can take up social relations. Here a wide variety of expressions available for a human body, such as giggling, growling, groaning, frowning, and screaming, are often repressed in favor of a relatively stable mask allowing only for very special gestures, facial expressions, and further forms of presenting a social self (ibid.: 36–37).

Representational images in effigy are usually stable presentations of self, which direct attention to that which is shown, withholding and covering anything undesired. Because these images have dissolved the somatic entity of images in corpore, they are not animated during presentation (except with moving pictures), as is the case in the creation of gestures and facial expressions, only during the act of perception. The anthropological connection between the two kinds of images explains why we maintain looking relations with different kinds of images in effigy although they remain stable and do not “actually” look back. We create a feeling of being looked at because we have learned to interact with moving images in corpore, which actually do look back, responding to our

49 His work Gender Advertisements (Goffman, 1979) is an exception and one of the few early social scientific studies of pictures.
behavior. A painted face, on a human body, directs our attention and responds to our looks (ibid.: 36–37).

The kinds of looking relations desired are more easily controlled in images in effigy, such as portraits, statues, and photographs, since the body needed to show an image does not intercept and disrupt the desired outcome. This is why pictures are useful forms for control and their use is widely regulated. Depending on the medium used for showing pictures, the means of regulation vary, since media transform the ways in which images can be shown. With photographs, because of the stress on their indexical quality, the link between images in corpore and images in effigy seems to hold especially strong.

A temporal orientation

There is also a temporal element in the discourse stressing indexicality. Film-based photography, as part of the discourse, is often seen as conveying an absent presence, something that has been but is not anymore. This is afforded by camera technology fixing the seen in time. Here photographs are seen as related to the past. When looking at online photo-sharing from the perspective of face-work, we still find many cases of photos conveying an absent presence, thus reminding us of what has been, of what we and others have seen.

The findings on some privacy-related fears imply that photos posted in computer-mediated interaction actually are seen as being the present self (and we have many historical examples of this, as in the practice of sharing cartes de visite from the late 19th and early 20th century). Here photos become agents of a very tangible presence, related to the “here and now” rather than a distant past. Here networked cameras are used in transmitting, as if in real time, a presentation of self. As one of those interviewed put it,

I do think that the line between private and public has shifted. Sometimes when I’ve been scrolling through publicly shared photographs, I’ve had to think, “Does this person really want to share all of this with everybody else?”

Besides relating to an absent presence, or representing the present self, some of the photos relate to conceptions of a future self, as when one says, “Young people don’t understand what happens to their pictures when they try to get a job – say, in 15 years...”
Here photos are endowed with special agency. Photographs, from this perspective, become agents of the self, duplicating identities and carrying them into a digital realm that seems difficult to control. From the perspective applied in this study, these photos are prime examples of distributed selves in a materially mediated setting wherein camera technology is endowed with special agency (cf. Gell 1998).

Neglecting the agency of online photos

Interestingly, one of the interviewees explicitly neglected this agency of online photos activated in the boundary regulation strategies of others. She saw photographs as instead without agency in relation to herself and did not conform to stressing of the indexical relation. As Belting (2001) points out, a change in the experience of one’s body is accompanied with a change in the experience of images. A previously quoted extract is illustrative here:

It would surprise me to see my photos somewhere else, because I don’t really think that too many people would look at them. I don’t feel that we’d be such interesting people that someone would want to look at our photos. [...] On the other hand, if someone wants to look at our photos or print them for personal use, it doesn’t bother me. A photo is not an extension of me; it’s just surface. (Tiina – emphasis added)

The example shows a way of questioning major public discourses of technical and pictorial agency by seeing photos as without agency in relation to oneself. It is a way of reacting to the increase of pictures in this “cam era,” which for many remains hard to control. For the analysis, the example aids in detecting implicit agencies in current discourses on online photos’ relation to one’s self that stress the affordance of indexicality facilitating the distribution of the self.

One might ask whether this is just an outlying, dismissable case that doesn’t fit neatly into existing categories. Or is it possibly an indication of a growing way of relating to life in a digitally networked “cam era,” preparing oneself and others to be ubiquitously depicted by cameras? This could become a specific way of relating to pictures. In this connection, bodies connect to materially mediated constellations via new and different kinds of gazes, which again mediate the experience of bodies and images.

Two further examples, these too cited above, point in this direction:
All the surveillance cameras that are in stores and everywhere, in hospitals, in a doctor’s reception area, in pharmacies – you have them everywhere. And it’s clear that you need to have them, but not one of us knows what these cameras entail if, for example, they record sound as well, and you talk about anything. […] And there might be hidden cameras that take photos […] that’s somewhat frightening and it’s not always clear where the moral boundary lies. But it seems to be the trend that you just have to adjust to having cameras around everywhere. (Pirkko – emphasis added)

It has been quite nice to have videos from hockey games to show my sons, so that they can see when they’ve succeeded. And maybe they’ll also learn what it looks like when they’re filmed. I remember when I myself started to do sports more seriously: my trainer showed a video of me on television and it was terrible to see myself. So I hope my own children won’t have this experience but that they’ll learn to see themselves through the eyes of others. (Taina)

These examples exemplify especially well the calls for a dialectical understanding of visual culture, stressing the importance of not only trying to understand how vision and visuality are socially and symbolically constructed but also asking how our social relations are mediated via visual means because we are seeing animals (Mitchell, 2002). Focusing on an interactionist perspective helps to show that images and media mold bodies and have effects on them: images, bodies, and media are interrelated (Belting, 2001).
Conclusions

The digitalization of communication, especially with its potential for users to create and share their own content, has effected a change in who gets to publish and distribute what kinds of information. Critics of this trend seem to fear that the political notion of publicity is in danger and that obscenities, trivialities, and dispersing communities will replace a more coherent conception of common societal action. This section shows that users’ regulation of the boundary between what is and what is not considered personal has not disappeared, and that those interviewed employed various strategies in order to maintain this boundary. However, the material also shows that this consideration of privacy is not one common idea shared by everyone and that people tend to have different perceptions about what one might publish, drawing the line of public morals differently.

Such user boundary regulation is unable, however, to take into account the lasting effect on computer-mediated communication wrought by the affordances of technologies used and the business models enabling their usage. This ensures that individuals can never fully control what they have been posting online – with services often actually promoting public sharing – which certainly has an impact on the forms of information that are and will be available. Nevertheless, a fundamental difference exists between the possibilities for interaction provided by one service enabling user-generated content and the next: studying usage of any specific service, such as Kuvaboxi or Flickr, and making universal generalizations from the findings will not take into account the differences in architectures, business models, and users applicable with other Web services. The varying relations to the agency of camera pictures identified in interview discourses need further attention. Neglecting the conventional agencies ascribed to camera pictures testifies to a very specific response to camera pictures in a “cam era.”
Rearing from afar: Mobile camera pictures in the social fabric of a kindergarten

The first case study shows that the “Kodak culture” has become a “fact” and is still a prevalent way of using networked camera technology, although other uses would be possible as well. Here the success of early “Kodak culture” is tied to the rise of mass production and urban nuclear families. The pictorial practices within the “Kodak culture,” advertised early on to future users, were a means to reflect on and actively create novel social structures, such as the nuclear family. As shown empirically, earlier social conventions for picture-taking still order visuality in a digital era, providing for prevalent use of camera technology. There are gradual changes in the ways in which pictures are used, but they are not as total as suggested in some related research.

The conventions in using photographs, underscoring the role of indexicality in camera-mediation, are helpful in explaining why sharing photographs online has become such a hot topic. Whereas most interviewees distributed selves to the photographs taken of them and treated online photographs with special care, as if they in one way or another might contain actual traces of the people depicted, some have started to neglect the agency of photographs’ indexicality. This is only one example among many brought up in the interviews, in which novel uses of cameras and camera pictures were discussed. Other interviewees used photography as a way to get to know new people, in order to “play around” in online fora or sell their photographs as advertisements for service providers.

As cameras are brought into novel contexts, ever more settings become part of the realm of camera pictures. For example, some kindergartens use digital camera equipment to document everyday life in kindergartens. Parents are provided with insight into the everyday life of their children in kindergarten, and important moments for the children, as well as their development, are commemorated with the help of cameras. Here parents are provided with a stream of images showing what is happening as they meanwhile do other kinds of things.

Near-real-time transmission of the seen in space is ever more popular at a time when individuals in society are faced with juggling multiple roles, while an abundance of

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1 This section is based on and extends work published by Näsänen, Oulasvirta, and Lehmuskallio (2009). See p. 201 for a closer description of the relation between the joint work and this particular subchapter.
events, an abundance of space, and the mediation of everyday communication provide for an individualization of references and a layering of spatiotemporal experience (Augé, 1994). Being a good parent, worker, friend, and citizen is not tied to focusing on one task in a clearly demarcated spatiotemporal setting; networked ICTs enable – and thus in a way ask for – bridging of spatiotemporal constraints (cf. Deleuze, 1993). Here the media at hand play an important part in the ways that selves can be lived out. How this is actually done, and how various actors relate to these possibilities and constraints, is an empirical question.

This is why I will focus below on a case study done in July 2006 in a kindergarten in Helsinki. (Näsänen, Oulasvirta, and Lehmuskallio, 2009) Unlike in other camera use in kindergartens, in which either the teachers are responsible for picture-taking or a webcam is mounted on one of the walls of the kindergarten, here both teachers and children were given digitally networked mobile camera-phones to use as part of their everyday life in kindergarten. The cameras had special software installed that automatically transmitted the photos and videos captured to an external server, which parents could access via a password-protected Web site.

**Mobile media in kindergarten**

Cameras are used in some kindergartens as part of the work routine. Some base the usage of cameras on the Reggio Emilia pedagogy. Here an important work method is the pedagogical documentation and exploration of everyday life in order to provide for increasing transparency, and thus visibility, of decision-making processes in the kindergarten. Through provision of parents with pictures taken of kindergarten life and thereby creating for them images of their children, means of communication between teachers and parents are expanded.²

Webcams have been used for a long time now in some kindergartens. Since 1996, the U.S. companies Kindercam and WatchMeGrow have offered to provide kindergartens with webcams, again connected to servers with restricted access. Other companies have started similar services, giving parents, grandparents, children, children, children,

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² A kindergarten manager I interviewed in autumn 2006, who did not want to participate at the time in a study conducted by Forum Virium for the ConnectedDay service later established for kindergartens (see [https://www.connectedday.com/](https://www.connectedday.com/) (last accessed on October 7, 2007)), had nevertheless begun to document kindergarten life in around 1990, on the basis of the Reggio Emilia pedagogy. Some of her fears are discussed later in this work.
kindergarten personnel, and service providers access to webcam data. They can join in watching life in kindergarten as it happens, even if they are not themselves at the kindergarten (cf. Jørgensen, 2004, 2005).

“If you can’t be here – WatchMeGrow from anywhere!” is the slogan of one of these companies, verbalizing one of the great hopes placed in technological infrastructures and digitally networked camera systems, a desire for a technique to contract spatial distance between people. Especially with webcam-based systems that can be accessed by third parties at any time, the technically arranged looking relation resembles the panopticon discussed above. Those having access to the webcam data, such as parents, relatives, kindergarten managers, and service providers, can choose to watch at any time while those being watched do not know whether someone is following them or not. The extreme facility of being able to watch combined with the difficulty of knowing whether someone is watching leads, according to the panoptic principle, to an internalization of control. “Proper” behavior is what bodies make visible, conforming to assumed moral values of a given social group, answering by performing specific visible behavior to possible normalizing judgement. Those watching again feel in control and benefit from novel knowledge gained.

The head of a U.S. kindergarten using WatchMeGrow verbalized the success of the webcam-based system, underscoring its benefits for those who watch, as follows:

When parents walk in our door and see our CCTV cameras and monitors, they know that we take childcare security seriously and when they learn that they can view streaming video of their children over the Internet as well, they are elated. Being the only child care center with online parent viewing in our area is a great marketing advantage. We installed cameras so our families can see the great personalized child care we provide. WatchMeGrow will definitely be part of the new day care center we’re opening next year. With WatchMeGrow online viewing I know I always have access to “see” my daycare centers. I also like knowing that WatchMeGrow is taking care of all the customer support and hardware maintenance so my staff is never distracted from their #1 responsibility – our kids.

(Kindergarten manager’s testimonial, http://www.watchmegrow.com/, last accessed on October 7, 2007)
The head of the kindergarten always has “access to “see” my daycare centers,” being able to monitor both employees and children, even if not present in the same locale. Showing that they use CCTV cameras and monitors, as well as give access to parents, is considered both a marketing advantage and a way to show that the kindergarten is a safe place to leave one’s children. The service providers have made it easy for their customers, the kindergartens, to install the system, since they provide the system maintenance, much as George Eastman and Kodak made it easy for the masses, their customers, to take snapshot photographs: just send the cameras to a developer and get them back later with preloaded film as well as developed prints of the pictures taken.

According to testimonials published on WatchMeGrow’s Web site, many parents like the service as well, being able to see their children even if they cannot be physically with them. The children, as well as other staff members at kindergartens using webcam-based looking relations, are invisible in the testimonials. Under the panoptic principle, as well as in recent writings on CCTV systems in novel contexts, those to be seen have to discipline themselves, because they know that at any moment they might be watched and do not know whether someone has been watching them. Here the panoptic principle, as discussed, is echoed with the “apparent omnipresence of the inspector [...] combined with the extreme facility of his real presence” (Kammerer, 2008: 120, citing Bentham – emphasis in the original; cf. Bentham, 1995: 45).

To study how networked cameras are used in novel settings, in a kindergarten environment, an intervention study was conducted in 2006 in a Finnish kindergarten. In contrast to described commercial applications such as Kindercam and WatchMeGrow, which follow a panoptic-surveillance-oriented concept, here both teachers and children received networked picturing technology to be used during kindergarten days.

In the following, I will cite extensively from our work from Näsänen, Oulasvirta, and Lehmuskallio (2009), in order to show how in that particular study we found specific ways of using networked cameras. Here the empirical data analysis and the publication were a joint effort. My work focused especially on analyzing the photos and videos taken, and writing about this part in the findings section. My co-authors have kindly agreed to me basing a part of my empirical Ph.D. work on this material and our joint publication. As done in the first case study, the term “we” in the following is used to refer to the authors: here especially the methodology and findings portions are only slight modifications of the published article. I have for the purposes of the questions of
the larger study significantly expanded the introduction above, as well as the discussion of the findings in particular. The joint work is marked both with often long block quotations as well as references provided in summarized paragraphs, differentiating sections referring directly to joint work from the additions made in this text. The joint work is cited in length, because it provides information that is useful for the discussion in this subchapter, as well as for the last chapter, helping to provide answers to the questions of the overall study.

In our work we noticed that

[p]revious research on design and evaluation of [ (...content-sharing) ] services on cell phones have conveyed mainly positive findings, showing various benefits in the way the content shared supports, for example, discussion and gossiping, coordination of common activities, fun and joking, and companionship [(...Jacucci, Oulasvirta, and Salovaara, 2007; Kindberg et al., 2005; Mäkelä et al., 2000; Salovaara et al., 2006; Salovaara, 2007; Sarvas, Oulasvirta, and Jacucci, 2005)]. Interestingly, a common denominator for these previous studies is that the user population has involved very simple social structures, such that they can be classified as primarily heterarchic (i.e., “flat,” as opposed to hierarchical), good examples being rally enthusiasts [(...Jacucci, Oulasvirta, and Salovaara, 2007)], schoolmates [(...Mäkelä et al., 2000)], and student groups [...(Salovaara, 2007; Sarvas, Oulasvirta, and Jacucci, 2005)]. Consequently, much less is understood about the possibilities of mobile media in other social settings than those involving heterarchic structures. Mobile applications are losing their novelty as an application genre and [are] spreading to different use environments. Here social factors determine the extent to which mobile media will be adopted in our society. What do we really understand of the social boundary conditions for the use and adoption of mobile media? [...]

Hayes and Abowd [...(2006)] in their work on automated capture technologies in an evidence-based care community context emphasize the need for community-based risk and reward analyses in design of socially appropriate technologies. Their findings pointed
toward the importance of taking social dynamics into account also in study of mobile media-sharing. However, [...] existing mobile media studies were not addressing these issues [at the time of the study].

To our knowledge, studies of mobile picture-sharing have involved without exception groups with [...] “flat” social structures – peer groups, interest groups, or primary groups wherein social distance is small, such as families. These studies have begun to chart the possible benefits of mobile media and in this realm are very valuable. For example, Van House et al. [...] (2005) identified the following functions of image-sharing: creating and maintaining relationships, reminding of and recording personal and group memories, self-expression, self-presentation, and personal uses such as using pictures as deadline reminders. Salovaara [...] (2007) studied the appropriation of a [...] annotation and sharing system among high-school students. He found that the students used the system to maintain relationships, send greetings, thank others for social occasions, and arrange practicalities. Sellen et al. [...] (2007) report one of the only studies of mobile media used for instrumental purposes (as distinct from “leisure” use). Their system, called SenseCam, is a wearable device combining a digital camera with sensors for elements such as motion and light level. They found that SenseCam images were instrumental in supporting people’s ability to connect to their personal past.^[3]

However, there are also studies that convey signals of differences starting to emerge within apparently homogeneous groups. Mäkelä et al. [...] (2000) studied how children and their social network communicate through digital images in their free time, employing two user groups: a group of four young boys and a family. The authors reported that images were used for telling stories, joking, expressing emotions, and creating art. Interestingly, the parents often refused to use images when making sure that everything was going well for their children; they preferred to make phone calls then.

^[3] Note the similarity of the SenseCam to Steve Mann’s WearCam (Mann, Nolan, and Wellman, 2003).
Salovaara et al. [(2006)], in a trial with rally spectators, concluded that collective and participative practices included in the creation and sense-making of mobile media challenge the perspective of an individual author in the field of [...content-sharing]. Jacucci et al. [...(2007)], also studying rally spectators, noted that some uses of their system were divided between co-present and remote users. Sarvas et al. [...(2005)] studied the sharing of mobile images in a group of five friends. They noticed that the selection of recipients did not reflect the stable group structure but depended on who participated in the event at which the images were captured. At the same time, some contacts, such as spouses and best friends, tended to be sent more photos than others.

Jørgensen [(2005, 2004)] studied the impact of real-time web feeds from cameras installed in a Danish kindergarten and noted that parents used them for different needs, including feeling secure, maintaining social contact (although one-sided), and getting information. She concluded that parents’ interest for the feeds is coupled with trying to find ways for coping with the complexities of handling everyday roles, mainly parenting and work.

In summary, previous studies of mobile picture-sharing have not been conducted with an eye to analyzing how heterogeneity of user group affects use, although the question is of importance for mobile media. Moreover, almost all earlier studies have focused on leisure activities, whereas this study was set in a mixed environment involving work and home. (Näsänen, Oulasvirta, and Lehmuskallio, 2009: 2167–2169)

Our case study looks at the implementation of a networked camera system in a novel setting, questioning technodeterministic analyses of the impact of novel information and communication technologies. Studies in work contexts, focusing on ICT use, have been developing more delicate approaches. For example, we noticed that studies of ICT use in workplaces (e.g., Grudin, 1994; Orlikowski, 1992) have demonstrated that the relationships among users have an impact on the ways in which technology is used. There is a broad body of literature covering these kinds of issues, but we found that
studies of workplace-focused computer-supported cooperative work in particular (e.g. Grudin and Markus, 1997) have shown how organizational factors influence the adoption of ICT. (Näsänen, Oulasvirta, and Lehmuskallio, 2009: 2167)

Already, taking these studies into account affects the understanding of novel camera picture use, which is hardly taken into account, especially in the empirical digital camera studies published in the last decade. As explained in our work, these lessons can not be used as such for explanation here, especially since a kindergarten is not a place of work for all stakeholders. We decided to use the term “social fabric” instead, in order to accentuate the various subject positions taken and practices employed there. Looking closer at kindergartens from a social fabric perspective shows that

[...kindergartens are an institutionalized method of child care in Western societies. They generally involve three groups of stakeholders – children, parents, and kindergarten teachers. Additionally they require a kindergarten supervisor, teachers, educated assistants, kitchen staff, janitors, and cleaners. A kindergarten is also teachers’ workplace, where they educate and care of other people’s children and are responsible for them. Children are among their peers in kindergarten, and they have restricted contact with the world outside the kindergarten. However, the kindergarten is more than the sum of its parts. The aims of a kindergarten are to support the educational task of the parents and to promote balanced development of a child’s personality. (Ibid.)

In other words, the kindergarten is a fundamental stepping stone before school in forming children’s bodies as social subjects that have internalized specific societal ways of acting and knowing. Kindergarten is one of the societal disciplinary institutions helping in molding selves that both know how to act “properly” in various situations, and do so by creating specific images of self in social interaction. This means that kindergarten teachers and parents together teach the children social conventions.

[...The interaction] between the kindergarten teachers and parents [...] is complicated by the difficulty young children have in explaining to their parents verbally about their daily activities. Thus, teachers are important mediating figures in distribution of information. The promise of mobile media in this context lies in adding to the
information that parents receive about their child’s day in kindergarten, which is almost without exception 1) verbal and 2) retrospective. The way mobile media can [...] aid in communicating about] everyday experiences and relate these [translocally] “across the distance” is the raison d’être of mobile media in this context. (Ibid.: 2168)

Mobile media is thus used in a disciplinary and care setting, a kindergarten, in order to help parents to know more about everyday kindergarten life, even from a distance. A desire to bridge spatiotemporal constraints, to extend the reach and the scope of the visible, to transmit the seen in space, and to provide new communicational means become a promise ascribed to mobile media in this setting.

**Methodology**

The software system called Meaning (Raento et al., 2005), installed on mobile camera-phones, was used in this intervention study for picture taking and sharing. As explained in our publication:

[...It] enabled both the teachers and children to share [...] content with parents in a near-real-time fashion (see Figure [...21]). The system automatically attaches metadata to the [...] camera pictures] captured and transfers content from the mobile client to a Web-based service for parents to view and comment on. The key idea in the design was to couple [...] picture] capture with transfer: as the user presses the capture button, the content is transferred [automatically] to a Web album unless this default action is overridden. More sophisticated control of tags, comments, and metadata is provided [for those wanting to do so], and the system suggests the most recently made choices as the defaults. [...]

By using the term “intervention” – instead of the conventional “user trial,” “user test,” or “user evaluation” – we attempt to frame the study as an evaluation not of how “good” [...] technology is but of the change it may cause in the lives and practices of the stakeholders.
An intervention study lasting a month was carried out at a kindergarten in Finland [in July 2006]. The children and teachers were given smartphones with a pre-installed version of Meaning. Web access was permitted to the teachers and parents as well as to the researchers. A mixed-methodology approach to data collection was followed, combining qualitative (interviews, content analysis) and quantitative (logs, content) methods. (Näsänen, Oulasvirta, and Lehmuskallio, 2009: 2168–69)

The setting

We conducted the study in a private, English-speaking kindergarten in the Helsinki capital region (hereafter “the kindergarten”). We chose this kindergarten since it is easier and faster to elicit permission to carry out a study in a private kindergarten than in a public one in Finland. In addition, since the language of the application was English, [...it was easier for an English-speaking kindergarten to use it]. The kindergarten typically has 25–30 children, aged three to six years, and five employees, but for the trial, spanning one month in summer, there were 10 children (six girls and four boys) and three full-time teachers, who always worked [...in pairs] at a time. Because of underpopulation in kindergartens in the summer months, half of the children being cared for there were from other international kindergartens, so not all of the children knew each other. Daily activities at the kindergarten include free play, indoor and outdoor activities spread throughout the day, meals, as well as quiet time after lunch for sleeping or resting.

Since the kindergarten we studied is a private one, there are probably more teachers per child than at public kindergartens. Under Finnish law, for example, a teacher is allowed to take care of no more than seven children in a kindergarten, which is two children more per teacher than in our setting. It follows that it might be difficult to annotate photos in a kindergarten with many more children, since doing so was not always possible in our study either. (Ibid.: 2169)
Figure 21. "After the target is shot in normal camera mode, a dialog box automatically opens that allows the user to choose the tags (a) and comments (b) to be included with the picture." (Näsänen, Oulasvirta, and Lehmuskallio, 2009: 2168)

Figure 22. “The main view of the Web page's media, with one page accommodating 10 clips and metadata shown on the right. The user can enter slideshow mode by clicking on the image.” (Ibid.: 2170)
The Meaning application

As explained in our paper, certain features of the Meaning application afford its use in a kindergarten: Since the flow of pictorial content to an external Web page is close to real-time, parents have the possibility of following their children during working hours form their ICT devices with networked connectivity to the Internet. The ease of capturing photos and videos with a single press of a button facilitates the system's use by two very distinct groups in terms of age and technical capabilities – teachers and small children. Additionally, the automated sharing of photos and videos affords also children submitting pictorial content to the Web album, without having to rely every time on teachers' assistance for doing so. The convergence of camera pictures with automatic metadata aids in contextualizing the photos, especially since most children cannot add manually metadata on a phone. Without metadata, it might be difficult to contextualize photos by pictorial content only. Since content published in the Web album is accessible only via a password for those involved, the networked camera system can be used in a kindergarten setting, which is possibly sensitive in terms of the photos taken and shared. And, the Web-based user interface, inspired by Flickr and YouTube,⁴ shows camera pictures in temporal order and allows search with the help of other metadata transmitted. The pictorial content can be looked at in single images, or as slideshows, and the videos can be played by clicking on them. These features provide opportunities to look at the pictures transmitted from a distance. (Ibid.)

Citing the closer description of the system:

Running on the ContextPhone platform, which was designed for Nokia S60 phones [...], Meaning enables publishing, tagging, and automatic metadata enrichment of [...pictures] immediately after capture. The user can publish a photo with one key press or store the [...picture] only in the phone’s Media Gallery. Before publication, the automatically associated metadata can be deleted and/or edited; the application remembers the last choices and updates location and other data automatically from sensor-derived information. For our study, the default publishing audience included parents and teachers. The content is then transferred, in the background while the phone is fully

⁴ Online software develops and changes relatively rapidly. The user interface should therefore be compared to the Flickr and YouTube of early 2006.
usable, to the Web album, which can be accessed and commented on. Typical transfer time is 15 seconds to two minutes, depending on the quality of the wireless connection. [In the meantime the camera phone can be used for example, for taking new pictures.]

The mobile client overrides the native camera application. When the camera application is opened and a picture is shot, the user can decide either to withhold or to publish a picture, with metadata that can be specified in a pop-up dialog box (see Figure [...21]). If the picture is to be published, the “Publish” button is pressed, triggering background transfer to the server and the Web client. Tags and comments can be added as well. Video capture operates similarly.

A Web album interface was custom-created for purposes of the study. It can be conceived of as a unidirectional publishing and discussion space. Media content was saved to a researcher-provided server. When logging in to the system, the user first sees a screen titled “most recent photos taken”; an example is shown in Figure [...22]. The Web client also provided a thumbnail overview of pictures in the study [...]. (Ibid.: 2169–70)

Procedure

Before the study, we sought permission for the study from the director of the kindergarten, the workers, and the parents of all 10 children. We also asked about the parents' interest in participating in an interview after the study. Three Nokia 6630 cell phones were handed out to the employees and one to the children. Each phone was named, and the name was propagated with the metadata [...]. The teachers’ phones were named “teacher1,” “teacher2,” and “teacher3,” and the children’s was “kids.” These names were included in the metadata as “tags.” When introducing the application, we avoided specifying how and why to use the system; instead we described its functions and interface.

Taking photos and videos from the kindergarten and sharing them with the stakeholders is a delicate matter. All shared camera pictures were transferred to [...] the fileserver of our home institution.
When providing the phones, we also gave the parents and workers instructions for logging in to the picture-sharing system. The information also addressed how to use the Web album in technical terms in case the users wanted to do so. All parents created usernames for server access and chose passwords for themselves. This media content was not accessible to others without a login to the system validated with a login ID and password, again available only to members of the aforementioned groups.

The study period itself was four weeks. Only one of the four phones was working at the end of the study, since a setting for the Meaning application was switched from “send the pictures taken” to the “no” option unintentionally by users. Both teachers and children wondered why the cell phones had not sent the photos to the server, since they did not know what had happened. The first such problems occurred after two weeks, leaving the group with two functional phones until almost the end of the study. Nevertheless, [...camera pictures] were sent throughout the four-week study. (Ibid.)

Data collection

We conducted interviews after the study period. At the end of the study, the [...content] created and logs were collected from the Web client. Our analysis builds on three data sources:

1. *Complete logs* of interactions with the Web client were registered with Google Analytics. The logs allowed breakdowns according to time of day and user.
2. *The [...camera pictures]* consisted of the photos and videos shot, associated metadata, and textual comments attached to these. In total, 209 videos and 483 photographs were submitted to the Web client during the study.
3. *Interviews* of two teachers and three parents were carried out after the study. All volunteers among the parents and teachers were interviewed. We did not talk with the children; while our methodology allowed doing so, we decided during the study not to, since it seemed
difficult to gather comparable data. Nonetheless, we believe that we
have a good overview of the children’s use of the devices, not only
because of the interviews with the teachers and parents but also via the
[...] photo and video material created by the children themselves.

Each interview took approximately one hour. Questions were open-
ended and concerned how, when, and why the user used the system,
as well as the user’s perceptions of the system. The qualitative analysis
of data followed the constructivist ideas of a data-driven approach
wherein identified themes related to the use of the media and
communication from each stakeholder’s point of view were identified.
By letting the data lead us instead of following a set theoretical
framework, we believe we do justice to the experiences of the people
studied and point to salient phenomena in the data.

In the material that follows, all names have been changed. (Ibid.)
Findings

The findings of the study suggest at first sight that the networked camera system enables successful techniques for transmitting the seen translocally and thus enhancing communication between stakeholders. In interviews, the networked camera system was described mostly in positive terms. When we looked closer at both interview data, as well as the pictorial content produced, it became clear that teachers, children, and parents perceived different aspects of networked camera use to be useful. Whereas the networked camera system enabled specific kinds of uses, for all participants it constrained others.

The camera pictures produced

Since the main findings have been well summarized in our publication, they are cited here:

Photographs. During the four-week study, 209 videos and 483 photographs were captured and shared, which amounts to an average of 6.2 units of camera pictures shared per phone per day. This figure indicates that the application was reasonably popular, although clearly not in constant use (as e.g. web-cam based systems might be). The first half of the study was [...] the more successful in terms of the number of pictures taken: 78.5% of all videos and 85.9% of all photos were shot in this time. The majority, almost 75%, of the photos and videos were captured with the teachers’ devices, and the rest were taken with the children’s device. [...M]ore than 90% of all pictures taken with the teachers’ devices concerned the lives of the children. If teachers appear in these pictures, they are mostly acting in the background. This indicates that teachers used the system mainly in order to communicate about children’s actions to parents. The children took pictures of each other in 62.5% of the cases, and 26.3% of the pictorial material involved a teacher, which is only slightly above the average amount of pictorial attention that the average participant received (22.2%). Thus, teachers were portrayed through their own phones but also from the children’s perspective.

Videos accounted for about 30.2% of the material shared, and even children, who were regarded in interviews as having been especially
fond of this form of [...content], captured 29.2% of their material as videos. About 70.8% of the videos were between 30 and 35 seconds long, with no intervention after pressing of the record button (recording stops automatically after around 35 seconds).

Commenting took place in about one fourth of sharings: 23.9% of videos and 28.6% of photos were accompanied by comments entered via the mobile client. This relatively low proportion can be explained by two facts: teachers were often busy with other tasks and most children could not type. (Ibid.: 2171)

The uses of camera pictures

We grouped the uses of camera pictures within different stakeholder relations. These are described, following the publication, in greater depth through examination of the relations mediated via cameras between children and parents, children as a peer group, children and teachers, and teachers and parents, in order to shed light in this context on the kinds of gazes enacted via networked cameras.

Children and parents

As will be underscored later in relation to Augé's (1994) concept of surmodernity, the networked camera system in the kindergarten studied provides a means for both parents and children to maintain a connection while having to be somewhere else, helping especially parents to juggle various societal roles (cf. Jørgensen, 2004). The camera system provides techniques for interactions that are not possible without it, or are handled in other ways, using other kinds of things as media in mutual interaction. The medium specificity of this particular networked camera system can be activated in particular ways. The relations between children and parents come in the following ways to the fore:

Following the child's life. The parents were interested in following their children’s undertakings via the Web album: 76 logins to the Web album were made during the use period, the clear majority by parents, and the average on-site time was 6 min 47 s. The average visitor accessed seven [...picture] content pages. The visits ranged from quick visits of about two minutes to longer sessions of about half an hour. As confirmed in
the interviews, most logins were in the evening on working days, particularly on Mondays, Tuesdays, and Wednesdays, and some on Sundays.

The focus on one’s own child is made explicit, as seen in one parent’s statement, “It’s interesting to see other photographs, but, to be honest with you; you focus on your own child.” All parents said that they looked mainly at the photos 1) of their own children, 2) that their children had taken, or 3) that their children had shown to them.

One parent mentioned that the whole family looked at the photos and videos almost every night since they wanted to see what had happened in the course of the day and [knowing that] the photos provided a lot of information about that: “We got a much better picture of the day by going through the photos and videos.” In one case, the parents were especially interested in seeing what their daughter was doing because the kindergarten was not their child’s usual day-care facility. [...] The parents were also interested in those with whom their children played. When looking at the photos, they asked about the people pictured – for example, who a particular boy and girl were.

(Näsänen, Oulasvirta, and Lehmuskallio, 2009: 2171)

Expressing experiences to parents. The system helped the children in expressing themselves through visual media, since the young children in the kindergarten were not fully able to explain and speak to their parents verbally about their daily activities. In the evenings, when the parents and the child were looking at the images together on a computer, the parents were able to ask the child more specific questions about the child’s day – for example, “Did you visit a park today?” or “Were there horses in the park?” [...] so for the children who were able to vocalize well and explain their days, [...] networked cameras provided a different way to tell their parents about their experiences. The older children had the necessary skills to shoot communicative photos and videos and, thus, were able to express themselves actively through visual media by choosing what they captured. The parents found it good that the children were allowed to take photos and that they were not just the
objects of photography; as one of the parents put it, “It gave them a touch and they felt they are part of it.”

The children’s photography practices focused on personally important motifs, [...topics] to which they already had formed an attachment. The children took pictures of each other, and they focused on their personal activities and did not seem overly concerned with documenting the background or contexts [...]. One child who was very eager to shoot photos and videos enjoyed describing verbally to her parents the stories behind the photos. This indicates that the system encouraged face-to-face contacts since the parents were able to use the system in order to talk in a more detailed way about life in the kindergarten. (Ibid.: 2172)

A peer group: Children

While parents bring children to kindergarten in order to be able to do something else, usually work, children are in kindergarten in a different kind of social setting, spending time with a large amount of their peers. Although teachers look after the children in kindergarten, the children have ample opportunities to interact with each other. The networked camera system introduced is used among peers in particular ways:

“Goofing around.” The children’s attitude towards multimedia material was twofold: some of the children were enthusiastic about the technology and photography in its own right, whereas others found it obtrusive to be photographed. According to the teachers, most but not all of the children were eager to use the cell phone.

The older children (six-year-old girls) were the most eager to shoot photos and videos, and they also created most of the [...content]. However, almost all of the children tried to take photos, and all could do so, at least with the teachers’ assistance. Only the oldest children were able to send photos to the server without continual assistance. Indicating the eagerness of the children to use the application, the teachers had to “wean” children from the camera at times.

The children liked to “goof around” in front of the cameras when other children photographed them – making faces, posing, and even
acting and staging funny situations. Often the children viewed the [...] pictures] collectively from the phone display immediately after capture, gathering around the phone. The children’s interest in photography is visible also in the way they posed. The favored poses range from looking at the camera while being photographed to smiling, saluting, and performing special dances. It seems that the cell phone was similar to a new and fascinating toy for the children, used in order to focus mutual attention on a pictorial activity resembling a form of play. All in all, face-to-face interaction in the situations wherein the images were taken is emphasized. [Picture-taking itself was an interesting activity.]

Not every child wanted to participate, though. One of them did not want to be photographed by the teachers but allowed it when another child did the photography, though usually making a face. The children’s “goofing around” also manifested that the device might have been seen as intrusive[, in contrast to the interest described above]. Interestingly, while the subject of intrusion did not come up in the interviews, the video content shows that some children posed for the camera unsympathetically. These poses were seen when the people pictured clearly felt uncomfortable with the presence of the device and at times were trying to hide or run away from the camera. In [an exemplary case], one of the girls is seen approaching three other children, who, after noticing the device, fled, saying, “She’s camering us; let’s leave quickly.” At this point, the girl behind the camera corrected them, stating, “I’m not camering you.” This confused one of the persons pictured for a moment, but after a while the girl added, in order not to be lying, “I’m taking a video.” This incident shows that in some cases the introduction of the camera seemed to be annoying.

Also power relations related to use of the camera become visible, since the person behind the camera has an advantage over the pictured who are escaping the camera. The girl was clearly more acquainted with the practices associated with the device, [the techniques of using a camera,] which can be seen in her effort to correct the language used.
This also came up in the interviews, in which the teachers noted that the younger children in particular did not have the necessary skills to use the cell phones. Hiding or running away from the camera and taking photos back were the ways in which those captured responded to uncomfortable situations. (Ibid.: 2172–73 – emphasis removed)

Children and teachers

The kindergarten teachers work, rearing other people's children, so that the children's parents can work somewhere else. This creates a specific situation in which the teachers and the children have a work relation from the teachers' perspective, while the children might not understand a difference between work and regular caretaking. The teachers work role in relation to the children becomes visible in their picture taking, consisting of educating children and supporting a child's development (cf. ibid.: 2173).

As done above, findings are cited from the joint study:

*Educating children.* The [...] teachers [...] used the networked camera system] as an educational tool for teaching children ways of communicating and other skills. The teachers [...] encouraged the children to capture [...] camera pictures] but also encouraged them to explain the content to [their] parents. While it was possible to annotate photos when sending them [to the server], a male teacher mentioned that he sent many photos and videos without writing much under them. He [...] assumed] that “the children can also explain.” (Ibid.: 2173)

For him it was important to inspire children to talk later about the pictures with parents. Due to the particular ways in which videos are technically created, he considered them to be easily understandable. By not providing all possible contextual information, he wanted to emphasize the need for later interaction between parents and children. (Ibid.)

*Supporting a child’s development.* The photos and videos were used to support the children’s understanding of their physical self-concept[, in a similar way to how one mother in the first case study used a digital camera in teaching her children about ice skating]. One of the teachers shot more videos since he found it educational for the children to see themselves move. Perhaps because of the system being embraced by the teachers and the positive feedback involved, some children wanted to
pose whenever the teachers had their [camera-]phone visible. When the children noticed that they had been photographed, they wanted to see the photos or videos on the phone screen again and again; as a teacher put it, “Children wanted to see [the photos] from the phone. ‘Look at me; I am dancing or singing!’” This indicates that, although the teachers had the parents in mind when they took photographs, they also maintained their own relationship with the children by capturing [...camera pictures] and providing feedback to the children about their activities. (Ibid. – emphasis removed)

Teachers and parents

One of the main reasons for a kindergarten to exist in the first place is that it is an institutionalized way of transferring situational care-taking from a parent to a teacher. Although the parents do not transfer all responsibilities regarding child care to teachers, the relation between parents and kindergarten teachers is grounded in the transfer. (Cf. ibid.) While teachers might be able to spot parents’ inadequate rearing by observing a child at kindergarten, the teachers themselves have to act in a trustworthy manner, so that parents feel at ease leaving children to be looked after for the time of their work.

Interestingly the situations in which teachers and parents meet are relatively scarce: While bringing a child to kindergarten, taking the child home, or during special occasions, such as festivities arranged at kindergarten to which parents are invited, or when having to discuss any issue regarding the child’s life at kindergarten. (Cf. ibid)

The networked camera system provides additional ways for teachers and parents to keep contact, especially since the pictures taken were transferred to an external server, accessible with a password both to teachers and parents.

Reporting children’s activities. The teachers emphasized that mobile [...camera pictures] captured at the kindergarten aided reporting about children’s activities. Not just special events were reported on; mundane daily activities were documented. Almost 75% of all pictorial material was obtained with the teachers’ devices – which they also lent to the children, particularly near the end of the study – and over 90% of it was of children. (Ibid.)
The amount of pictures taken implies that the teachers’ devices were used by teachers with parents in mind, and this was done, similarly to the practices of the “Kodak culture,” in a positive vein, maintaining and creating face for both children and teachers in the kindergarten. (Cf. ibid.)

Many facets of life at the kindergarten were photographed [...]. Important motifs and situations captured included a focus on 1) playing various games, such as hide-and-seek, or playing football or completing a puzzle; 2) playing without a formal structure, like sliding, dancing, and jumping around; 3) exercising various skills, such as cycling, drawing, and cleaning up; 4) the teachers actually educating the kindergarten children in geography, telling the time, and learning how to use the cell phones; 5) showing the results of achievements, especially completed drawings; and 6) carrying out day-to-day routines such as eating, sitting, waiting, and occupying oneself with other everyday activities. Also, 7) outings, travel away from the kindergarten for a time, were important events to capture. Going to a Winnie the Pooh exhibition, sitting on a bus, looking at animals, going to the beach, and viewing special sights were photographed, as were 8) pictures that somehow address the agency of the mobile device itself and 9) pictures that were hard to categorize, such as extreme close-ups of a face, hands, and a ball. The pictures taken show that the teachers tried to provide parents with a well-rounded depiction of children’s time at kindergarten. Even though the teachers told us that their intention was to photograph everyday situations at the kindergarten, it is interesting that sorrow, anger, and crying children seemed to go non-photographed by the teachers, although they are obviously part of everyday life in kindergarten. (Ibid.: 2173–4)

The motifs and situations were depicted in a positive vein, lending support to the claim that teachers focused on showing parents how "good" they are in parenting, underscoring their embodied looks that are supporting and caring, instead of confused, angered, or tired. (Cf. ibid.: 2174)

The teachers also said that they intentionally photographed situations that would be difficult to explain by other means. They shot many
videos not only because the children liked them but because video was [considered to be] more “self-explanatory,” with less needing to be explained textually. In general, these circumstances were described by the teachers as authentic situations in the children's play and games. The teachers were happy if they managed to capture candid shots of children in those activities. “There were also some children who were singing spontaneously by themselves, some kind of a dance–song show for nobody, not even for a camera. The children didn’t notice they were captured,” said a teacher. This points to a communicational advantage introduced by the system: the parents could become bystanders of a sort and follow what kinds of games their children were playing. (Ibid.)

Learning about the kindergarten. A second pursuit that we discerned considers the whole kindergarten as a service provider. Teachers put effort into describing the kindergarten and its surroundings to the parents via [...the networked cameras provided]. This came up explicitly in the interviews: the teachers supposed that the parents are interested in the surroundings of the kindergarten, because not all parents lived nearby and, therefore, some would not necessarily be familiar with the surroundings. Teachers mentioned taking photos of outings so that the parents could see the places their children visited. This phenomenon is also visible in the photos taken: the teachers often tried to include in their pictures people in the background so that key people and also surroundings were captured in the same image. An example of this is a photo from a visit to a park the group visited regularly. For the parents this meant an opportunity to get to know the places where their children spend their time while the parents are at work. [...] 

The commenting tool was used exclusively by teachers in trying to help parents to 1) find content and 2) understand it. In the first week, commenting was relatively popular, amounting to 68% of all comments on videos and 73.9% of comments on photos made during the research period. Of all media shot in the first week, about 32% had textual comments. Later on, the amount of textual notes halved for the videos
to 15.4% and dropped for the photos as well, to 22%. The typical comment described the activity or location: “snack time,” “playing the snow white game,” “central park in the afternoon.” These descriptions anchored interpretation to a specific level, highlighted details that seemed important, and relayed additional information. All comments were short, ranging from one word (e.g., “Paparazi”) to the seven-word “Mari and Jane hide from the camera.” The brevity emphasized the role of the pictorial communication. For the sake of completeness, it should be noted that the children, lacking writing skills, did not write textual comments, except once when exploring the interface: “Ajncädmbdkajamdejedaädbkädc.Dagqkpkg.” However, the teachers had added some comments to the photos captured by the children. Commenting was performed by the teachers at the beginning of the study also because they believed that comments supported the parents' understanding of the content. (Ibid.: 2174)
Discussion

In the first two case studies presented earlier, individual uses of networked cameras were explored, and here the mediation of one's looks via a camera is often a personal look, distributed via cameras and pictures taken with them. For example, the pictures a mother takes of her children on vacation reflect the way she looks at her children, or would like to look at them, mediated via the affordances of the camera. Those depicted again respond mainly by accepting or denying the photography situation, using their bodies as images in effigy when doing so. The images in effigy created are heavily mediated via the situational looks of those using the camera.

In contrast to the first two case studies, we have here a more complex setting of camera use. The findings show how different stakeholders in a hierarchical setting use a networked camera system, providing additional information on how cameras are used as they are ever more available. The cameras were used by teachers and children, who were both able to create visual representations shown to the parents. The parents saw images in effigy showing children and teachers depicted. Because this was an intervention study, it is possible to follow how the use of the system began, and how use transformed as the study period progressed. Since the empirical data collection lasted a month, transformations and coping strategies become visible, but these might obviously change in the long run.

After a look at the findings showing how the cameras were used in this setting, the discussion is helpful in pointing to the importance of the relations between people in camera use, as well as providing information on the importance of the specific devices used, taken up also in the last chapter focusing on a more general level on the role of mediations in networked camera use. In the following discussion, a closer look is taken at the mediations of looks afforded by the networked cameras used in this study, as well as the implications of intersecting gazes (Lutz and Collins, 1993) in camera use.

Mediation of looks

The medium used for taking and sharing pictures across time and space affects the ways in which it can be used. “[T]he specificity thus generated also generates a kind of ‘functional fixedness’ that produces friction when an object, tool or routine is ‘carried over’ to a different context or medium,” says Lanzara (2009: 1372). This means that the
ways in which social relations are lived out are effectively constrained by the media at hand for doing so.

Looking at the networked camera system applied in the kindergarten context – the mobile camera-phones as devices, the Meaning software used for taking pictures, annotation with metadata, and automatic transmission to an external password-restricted server accessible via a Web service – one can pinpoint several elements that effectively mediate social action. In the following the design choices we identified are introduced, and tied to the earlier introduction of affordances that are activated in particular ways (cf. Rose 2010).

With both children and teachers given mobile camera-phones to use, everyone in kindergarten had an opportunity to create pictures that can be shown to others. (Näsänen, Oulasvirta, and Lehmuskallio, 2009: 2175) This is in contrast to systems that have been introduced in which only the teachers have a camera for taking pictures, or in which a camera is mounted on a wall, streaming images to a Web client. Thus simply that many cameras are in use facilitates getting different kinds of views of kindergarten life.

We noticed that the camera phone as a tangible object, used both for pointing at that to shoot at, as well as in order to gather around it in order to look at the images captured, is central for the emergence of specific picturing practices described in this work. The children could gather around the phone as a boundary object, using it in order to focus mutual attention. The small size and light weight of the camera-phone affords carrying it around and thus capturing very different kinds of images compared to e.g. wall-mounted systems. (Cf. ibid.)

With its default settings, the software used sent the pictures and videos taken automatically to the Web client. By pressing a button, the system did the rest, in analogy to Kodak's advertising slogan. This afforded also small children to use the system, whose techniques of the body differ significantly of those of teachers. In this way, the automation of the transmission of the seen helped all stakeholders in the kindergarten in taking pictures and sharing them further. But since the automation remained black-boxed for the end-users, they did not understand how to correct transmitting settings they had accidentally changed, as described earlier. (Cf. ibid.)

Thus the commenting feature of Meaning, providing a means to add textual metadata to pictures taken, was used to contextualize the pictures taken for the parents,
who do not spend as much time at the kindergarten. Despite some teachers using the commenting feature, especially in the beginning of our study, parents did usually not reply, discouraging further use of the feature. (Ibid.)

Whereas in kindergarten the camera device itself, and the uses it affords are of special importance, the parents had mainly access to the pictures via the provided Web client. As explained earlier, parents took the opportunity to look at the pictures mainly while being home and at times from work, doing so in front of a computer screen both alone and together with their children.

The Web client showed the pictures taken in chronological order. (Ibid.) Although parents could have used the Web client as a "remote eye," leaving it running while e.g. at work, comparable to a real-time Web feed, this kind of use seemed not to occur. They did not wait for things to unfold or for their children to appear in front of the camera. This seems to have been affected at least somewhat by the specific affordances of the networked camera system in use: not too many pictures were transmitted at a time, and with transmission times between 15 seconds and 2 minutes, the pace of new pictures seen on screens is slow comparable to pictorial content seen in other screens at home, such as on TV.

Because of the importance of indexicality as an affordance in camera use, and the ways in which it is used to distribute "self" into images, it is integral to the use of the system at all in this particular setting that the camera pictures published in the Web album were password-protected (ibid.). A simple design solution handled otherwise could have left the networked cameras unused.

In our study we underscored that the surplus value of the networked camera system used is "its support for mutual understanding of life in a kindergarten in spite of differing spatial distances, competencies, strategies, and activities “separating” the stakeholders" (ibid.: 2175). From the perspective of desires for techniques, the system provided means to cope with surmodernity by giving participants techniques to use in order to enhance their embodied capabilities, extending their motor and sensory organs, and helping to direct useful sensory information into the body.
Intersecting gazes

Before the introduction of the networked cameras, the children and teachers had a mutual spatiotemporally restricted relationship. When the children were at the kindergarten, they were among their peers, and among teachers who looked after them. The parents dropped the children off at kindergarten and picked them up later, and as this happened the parents and teachers could exchange information. Additional exchange was usually in written form and sometimes via phone calls. (Cf. ibid.: 2173)

With the introduction of the camera system, the parents received more information about everyday life in kindergarten, from both children and teachers, mediated by the camera system. Before the study, some parents had voiced worries about their children’s privacy. (ibid.: 2174) Here the indexical relation between the depictions and those depicted is again highlighted. The possibility of camera pictures of one’s children, taken at the kindergarten and shared publicly in online fora, provided for anxiety, as explored in the second case study, “Dealing with privacy in online picture-sharing.”

After discussion of the technical features, the design solution to restrict third party access via password-protection seemed acceptable. (ibid.) Once the system was in use, parents could follow life in kindergarten via the pictures taken by teachers and children. For parents, this setting provided added value. They were coping in surmodernity (Augé, 1994) with multiple roles, in this case especially with trying to be good workers (which is why they left their children at the kindergarten) and good parents. The camera system enabled them to look after their “apple of the eye” (cf. Jørgensen, 2004) in additional ways.

For the parents, the value of the system was, therefore, very similar to the value that parents assign to kindergarten webcam systems such as Kindercam and WatchMeGrow, presented at the beginning of this case study. Also here parents liked the possibility of distributing their vision, seeing more than meets the eye. The techniques for doing so differ between the two cases, but both help parents in coping with multiple roles. Networked ICTs afford bridging of spatiotemporal constraints while similarly providing for a layering of social experience as it happens.

With the aid of the cameras, the parents’ eyes were in a way always possibly present at the kindergarten. If a child or a teacher used the camera, the parents were involved in the things unfolding. In contrast to the webcam-based systems, in this case
parents could not decide when to use the camera system. Children or teachers, with cameras in their hands, had to use the devices first.

The children used photography as a boundary object (Star and Griesemer, 1989) in interacting with their peers. The cameras drew the children’s attention and became an everyday part of social interaction at the kindergarten, which was enforced by those families discussing the pictures in the evening and thus orienting the children’s interest to the use of networked cameras. The children’s interest in use of the devices came to the fore especially as the teachers felt the need to take the cameras away from the children at times, later restricting the use of cameras to a brief portion of the day at the kindergarten. (Cf. Näsänen, Lehmuskallio, and Oulasvirta, 2009: 2174)

We found that not all children liked to be depicted, finding it invasive. As cited above from our findings, children expressing this concern would flee or hide from the camera and take photos in return in order to respond to uncomfortable situations, fighting with images against being photographed. Here the techniques of the body that have to be learned in order for one to take pictures and in order to be photographed come to the fore. Those children not comfortable with cameras did not seem to be fluent in using the devices, not knowing exactly how to assemble their bodies with the affordances of the cameras in order to represent the seen for others to see, transmit it in space, or converge it with other kinds of information. Intersecting gazes are, therefore, of importance not only between clearly different stakeholders (such as parents, teachers, and children) but also between individuals, such as between children in kindergarten. Camera use, the necessary techniques of the body, and the social conventions related to them have to be explicitly learned.

We found in our work that also the teachers had the parents in mind, when using the camera system. (ibid.: 2175) They directed their picturing attention on issues that they thought might interest the parents. Examples provided in the findings include reporting on children’s everyday activities, or showing parents aspects of the kindergarten itself that they might not get to see during their work day.

We also noticed that some teachers explicitly used the camera in ways supporting communication between children and parents. (ibid.: 2173) As explained above, not adding contextual comments was considered by some teachers a way to support parent–child interaction. The children were shown with the help of images in effigy their images in corpore, and techniques of the body.
When looking closer at the medium specificity, we found that the depicted scenes, transmitted via networked cameras, provide parents and possible third parties with a record of teachers' work. The children as on-camera subjects are also those taken care of while in kindergarten (ibid.: 2174)

This possible tension is described in our findings:

When asked directly, the teachers did not express having been concerned about the media being used for evaluating them, although they felt that threat “in the background.” (Ibid.: 2174 – original emphasis)

The teachers, well understanding that examining their work practices from afar is a way to enact disciplinary techniques, were able to handle this concern since they were able to deny the children the use of the cameras. In doing so, they had relatively high control over what was being photographed. Nevertheless, children managed to depict teachers in ways they did not like to. In these cases, the affordances of the networked camera system did not enable teachers to delete any pictures. (Cf. ibid.)

Other kinds of pictures might be taken in a long-term implementation, used in assessment of the teachers' work. The cameras afford taking several kinds of pictures.

_Becoming a “good” worker_

Our study showed that the networked camera system was effectively used, but we also noticed that all uses were influenced by stakeholders' mutual relations. Regarding use practices, all are a boundary condition for camera use in the first place. Since both parents and children mainly benefited from the system, we noticed that the teachers were the ones with the most to lose in this setting. They received feedback mediated orally by the children and parents, but little more. (Ibid. 2175)

Importantly, as we discovered in this study, without the teachers, the networked camera system would not have been in use in the first place:

If another group (the children or parents) were missing, the two remaining groups would still reap benefits. For example, if the parents had not been interested in viewing the media, the teachers and the children would have used the system for “ goofing around” and “supporting the children’s development,” respectively. Without the children taking pictures or posing in front of cameras, the teachers and
parents would have been able to communicate via the system. (Ibid. 2175)

Only the teacher group had an interest in satisfying the mixed interests, both those of parents wanting to cope with their dual role of good worker and good parent and children wanting to learn how to use new devices and communicate with their parents while at the kindergarten. As we noticed in this study, the teachers taught children to take pictures the teachers had difficulties to control, making it difficult for them to present a self they chose themselves. (Ibid.)

This provided for teachers a need to regulate the use of the system. As we found, in reference to Grudin and Markus (1997), the networked camera system influenced the existing power balance within the kindergarten setting. Children were able to show more of what they usually could in regard to kindergarten life, which could become problematic from the teachers' perspective. The gatekeeping position of teachers was threatened if camera use was not regulated. By showing how to use the system and later explicitly regulating its use, the teachers provided social conventions for IT use. (Ibid.)

Concluding remarks

This third case study shows, in contrast to other studies of mobile camera-phone use in social settings, but in line with studies presented in “Asymmetrical uses of the visual” that the social fabric matters where the use of camera devices is concerned. Depending on the social fabric in which a system’s use is situated, gazes intersect differently. Additionally, the study shows that the medium-specific affordances play a role in the ways in which networked cameras can be used, although not dictating action.

The setting studied is of special importance because ICT-development and business models rely on the possibility of ever more spheres of everyday life being connected translocally, and camera pictures are an important part of this. Here conflicting values and life interests provide for business opportunities, since the tension between being a good parent and a good employee is capitalized on with technological innovations. Kindergartens, which allow parents to work while their children are looked after, do not always provide sufficient means for being in contact with one’s growing child while simultaneously wanting to work. The “distant closeness,” or mediated presence, discussed with camera-phone pictures posted on moblogs, submitted to photo-sharing
sites, and sent via MMS to other camera-phones is presented as a solution to this dilemma.

The networked connectivity as an affordance provided by these devices, enabling specific ways of bridging time and space, afford a social organization which would have to be lived out very differently without the media at hand.

If you can't be here, although you'd like to, don't worry – watch me grow from anywhere. This desire for a technical solution applies not only to parent–child relationships during working hours but also to other kinds of social relations that are lived out translocally. If the head of a kindergarten wants to work remotely from her summer cabin that has an Internet connection, she might want to have a service that lets her observe her kindergarten. Or if grandparents, living in another city than their grandchildren, want to follow what the children are up to, or service providers would like to verify from their office that the service is working, all can connect to remote locales via materially mediated looking relations, which arrange our interactions in specific forms.

Various societal stakeholders increasingly suggest and provide technical solutions to the problems individuals are faced with when juggling multiple social roles such as good parent, worker, relative, and friend. Webcam-based and cell-phone-camera-based services, such as the one discussed in the kindergarten context but equally those used, for example, to catch up with relatives and friends living far away, provide a solution for bridging spatiotemporal constraints, but they do so with costs involved.
Culture jamming: Using images against images

The findings on non-professional camera use show pictorial practices in which the recipients of one’s photos, and thus of one’s looks, are regulated in specific ways.

In the first case study presented, the pictures in effigy taken with networked cameras mediate the look of the person behind the camera. This mediated look is shared with close relatives and friends, people with whom we tend to share similar looks *in corpore* as well. The ways of using cameras are in this example surprisingly similar to those seen in earlier studies of snapshot photography. This suggests a shared pictorial practice – referred to here, in line with Chalfen’s (1987) suggestion, as the “Kodak culture” – which is translocal and private. The instructions for a “proper” “Kodak culture” are learned in face-to-face interaction but shared just as much translocally via cameras, their instruction manuals, and advertisements; via a wider business infrastructure that benefits from people using cameras as part of their private emotional interaction; and through legal prohibitions directing camera use into specific, accepted forms.

Networked information and communication technologies afford ever more novel uses of cameras, of which one of those most frequently discussed is the public transmission of the seen in space. Since the mediated look in the “Kodak culture” is understood by many as being a private one, and those depicted as somehow distributed into the pictures, the public distribution of this mediated look on photo-sharing sites and in other online fora causes anxiety. The second case study showed reasons for sharing camera pictures for non-professional purposes on a photo-sharing site, focusing especially on the different ways of regulating the boundaries between what is seen as private and what is considered public. Although there are many reasons for sharing one’s pictures publicly, the main ones are 1) trying to find like-minded people, 2) responding to technical constraints (e.g., using YouTube for public video-sharing because one doesn’t know how to share videos privately), and 3) not ascribing an indexical relation to the pictures shared and therefore not feeling a need to find means of private photo-sharing. These public ways of sharing camera pictures are an additional source for people interested in using cameras, providing novel ideas of how to use cameras, which can be imitated in various settings.

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5 This section is based on and extends work published by Lehmuskallio (2007, 2008a).
One of these novel settings into which networked cameras have been brought is the kindergarten. The third case study looked more closely at the use of a networked camera system in a kindergarten, in which both teachers and children contributed to taking pictures and sharing them, while parents were able to access these pictures remotely. Here a real-time translocal pictorial connection was established that helped parents cope with surmodernity. In a setting such as this, the social fabric of the kindergarten is crucial in the ways in which networked cameras are used translocally. For parents, restricted access to the pictures is important for use of the system in the first place, whereas the teachers constitute the most important nexus in making the service feasible. As often happens with IT systems, those having to introduce the system and maintain its use benefit the least from it.

The three case studies show important continuities in picture use, but all of them point as well to novel ways of using pictures, suggesting gradual changes in pictorial practices, which do not necessarily substitute for existing ways of using cameras and may instead complement them with novel purposes. All cases highlight the importance of private or semipublic sharing of pictures that are taken and shared through commercially maintained infrastructures.

In recent years, public sharing of non-professional pictures has been increasing, afforded by the possibilities of networked ICT infrastructure but as well by mass media, which aid in focusing attention on specific causes. Non-professionals are encouraged to create advertisements for companies, to act as fans in public venues both online and offline, or to use networked cameras in other ways suggested in advertisements or by event organizers. Non-professional uses of networked cameras are encouraged to be played out in professional venues, partaking in changing our understanding of the divide between professional and non-professional uses. Although these examples are an important part of non-professional uses of networked cameras, I will focus below on an especially widespread public non-professional image use that explicitly contests existing visual orders.

The image use explored, cultural resistance (Duncombe, 2002) using advertising-like methods to draw attention to social injustices and mismanagement in the context of a networked “camera,” is of special interest for this study since it at the same time is an example of a publicly shared translocal pictorial practice enacted in different places around the world and – because it contests asymmetrical visual orders –
aids in identifying some of the ways in which synoptic and panoptic principles merge in the use of networked cameras.

The cultural resistance explored works on a symbolic level, as an attempt to change the ways in which bodies perceive images. This perspective underlines the importance of looking at images as playing an active role in creation of meaning for individual lives. Images offer surfaces with which to confront individual agents’ identity-production and thus the creation of communal feelings. In these communities, we believe that we are part of something larger than ourselves and so in a way actually are.

Because of the mediation of communication in surmodernity, many of our felt groups of reference actually are imagined communities, imagined groups of reference (cf. Anderson, 1983). Since the mediation of communication is only partially locally bound, we connect ever more to imagined communities that are translocal, spread over space that does not stop at national boundaries (Appadurai, 1996; Reuter, 2004).

The examples of cultural resistance discussed show specific translocal techniques of the body that have become social idiosyncrasies (Mauss, 1973) in contesting asymmetrical orders of the visual. At the same time, these translocal practices are a way to shared sociality, for feelings of intersubjectivity reified in collective symbols that are used as emblems of a group (Collins, 2004). This collective feeling enables those active with similar techniques to connect to their counterparts in Berlin, New York, Bogotá, and Ljubljana, as pointed out by my interview partners.

In the following discussion, first, because of the focus on cultural resistance that uses advertising-like methods, present-day advertising as a specific kind of synoptic relation will be focused upon. Focus on the agency invested in images in advertising is of special importance in the attempt to understand why visually uttered criticism takes the forms it does. Second, because this visual criticism is known especially as “culture jamming,” its origins and contemporary associations are introduced. Third, with the aid of the examples of the “Barbie Liberation Organization,” “deportation class,” and “Nikeground,” I will try to delineate crucial implications of cultural resistance that uses advertising-like methods. Fourth, in order to gain a more nuanced understanding of why and with what kinds of ideas these image acts are performed, I focus on interview responses from political activists using these kinds of methods in and around Berlin. The views of those interviewed are of special importance in discussion of the controversies that enter the foreground as people engage in this specific kind of pictorial practice.
Advertising and critical visual practices

Advertising as a synoptic setting

Commercial enterprises, such as Kodak for snapshot photography; Kuvaboxi in the realm of photo-sharing; or related commercial applications in kindergartens such as ConnectedDay,6 WatchMeGrow, and Kindercam, are important in the maintenance of networked camera use in the first place and have their own interests in capitalizing on circumstances with the aid of non-professional camera use.

Operation on the synoptic principle, discussed near the start of this work, is one of the ways in which these kinds of companies and others try to influence the use of their devices and to get people interested in them. But instead of being able to dictate what people should buy or use, all companies act amid a wide variety of other stakeholders.

With the growing mediation of information, the multiplication of representational spheres, and the individualization of references, we have a downright contest among various stakeholders trying to awake bodies’ attention. The economy around attention uses mechanisms for creating and maintaining attention as a form of capital in order to translate it later, be it to money, political influence, or something else. (Goldhaber, 1997; Franck, 1999)

Interestingly, marketing methods and advertising in particular have assumed an increasingly prominent role alongside more traditional means in attempts to create a nexus for personal orientation, used for awakening attention and capitalizing on it. Companies, private persons, city and state institutions, and religious and political organizations all believe in gaining added value through images created by means of advertising methods. Depending on the media used, some of these images are transformed into pictures on letterhead, posters, Web sites, T-shirts, etc., thus gaining “a life of their own” and transforming the ways in which bodies relate to these images. The images produced serve as visual stereotypes, or visiotypes (Pörksen, 1997), mostly connoting professionalism, quality, and reliability.

At times when many products and services seem interchangeable, social actors focus increasingly on the image so as to produce a unique sales proposition, and they do so with the aid of methods learned from synoptic arrangements. Brand-building methods are broadened so as to make certain brands important to individual identities, or even to

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6 The ConnectedDay service in Finland, in which teachers used a system similar to the one discussed in the previous chapter, had to close down because it was unprofitable.
how they produce meanings of life. Harley Davidson is an oft-quoted example of achieving this mythical status, but even the Lutheran parishes of Helsinki rely on advertising to promote grace and the Gospel, the “good news” of the Christian message. Although some actors do produce their own campaigns, including brainstorming and buying media space, more and more assignments are given to professionals, advertising agencies and their subcontractors. Here, the agency in presentation of one’s self, products, organization, and ideas is distributed to professional marketing agencies – an approach that in the future might become increasingly popular for leisure activities as well. We already find photo companies promoting special photo shoots for profile pictures to be uploaded to online sites.

Advertising would not be necessary without competition. The markets in Western industrialized countries have reached a saturation level, in which context often a real product difference is achievable only via a focus on the product’s image. At the same time, locations and processes for producing industrialized goods are selected on mainly an economic basis. Standardization and automation are often necessary for improving efficiency and cutting costs in a globalized capitalist competition. Standard-manufacture products have to show enough differences if they are to be bought by a consumer searching for something special. (Schimansky, 2004)

In order to secure competitive advantage, advertisers strive to facilitate long-lasting bonds between bodies and products, making specific techniques emotionally satisfying. Advertisers have started to propagate brands as friends with which consumers can build social and emotional relations, just as they do with other forms of mediated communication. For example, the agency Saatchi & Saatchi has created the concept of Lovemarks in order to create brands with which bodies would have love-like relations, relations that are emotionally rewarding. Because of their emotional importance for consumers, these kinds of brands are created to give orientation for everyday life. According to the agency, people buy lovemarks not because of a functional utility but because of their emotional surplus. In its self-portrayal, the agency sets the creation of lovemarks as its strategic focus.

These kinds of brands are created for catching bodies’ attention and give orientation, a specific order, for a possibly insecure everyday life. The orienting direction

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7 The campaign-related Web site can be found at http://www.armo.fi/ (last accessed on June 28, 2006).
8 See http://www.saatchi.com/worldwide/what_we_believe.asp (last accessed on August 11, 2006).
claimed to be given through a focus on the agency of images in advertising and marketing is seen already in the names of important marketing institutions. The newsletter of market research company Sinus Sociovision is Navigator, whereas one of the most important German advertising and marketing periodicals is Horizont, its name meaning “horizon.”

The five-level brand leadership model (Zimmermann et al., 2001; Klein-Bölting and Murad-Aga, 2004) used at the advertising agency BBDO gives an example of a five-stage classification of brands and thus an impetus for marketing methods if one wants to influence the image of one’s products (see Figure 23). It shows that brands can be positioned at different stages, whereas only some brands are actively built so as to be an integral part of bodies’ identities, and only some try to achieve “mythological” status, giving direction to the ways in which bodies order their everyday life. A consistent level of quality and complying with a legal framework are often the first steps taken in attempts to influence bodies with marketing methods, before branding of a product even occurs.

See http://www.sinus-sociovision.de/1/1-1-1.htm and http://light.horizont.net/ (last accessed on August 11, 2006).
With this background, the advertising industry can be seen as influencing the creation of specific traditions by suggesting models for cultural actions, and thus techniques of bodies. These models are used for creating images that are distributed in public urban spaces, whether belonging to the target group of specific campaigns or not. The various readings of these mass-mediated images may be different, as, for example, Stuart Hall (1999) has shown. What is of importance here is that the readings are based on pictorial media that the recipients have not been actively creating themselves.

Instead of forcing specific meanings on consumers, market research tries to register these various readings such that target groups can be created more accurately, focusing on economic, demographic, and psychographic factors. Accordingly, David Lyon (2003) notes that public urban space is ever more a focal point for the assemblage of methods of governmental surveillance and acquisition of data on private consumption behavior. Commercial networked camera systems used for creating and sharing information are even more so. This leads to social sorting, which is done in processing of the collected data, usually with the aid of information and communication technologies.

The digital divide thus is connected not only to varying access to information and communication technologies but also to the social division created with panoptic data (ibid.). The panoptic data flow, in the case of study of private consumption behavior, back to attempts made with informative pictures to influence how bodies connect to images and media. The pictures shown to us in efforts to influence our everyday behavior are constructed on the basis of more or less accurate data collected about us.

**Using the synoptic setting for trapping**

Advertising, as noted above, strives “to transform the way people think, feel and ultimately behave.” Following the idea of advertising’s transformative effects, advertising images, created in order to influence bodies’ behavior, can be understood as traps because they are constructed in order to impede the passage of unsuspecting bodies and hold them in suspension, eliciting a particular response. Alfred Gell (1999) has drawn this analogy with trapping for artworks with complex intentionalities, but I suggest that the metaphor of trapping suits advertisements especially well.

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10 Part of this argumentation is based on Lehmuskallio (2011c).
Marketing language itself is filled with concepts from the world of hunting and trapping. “The hunt for customers,” “cool hunting,” and “customer-trapping” are examples of the use of this kind of language. In saturated urban environments, images are used in winning customers, with claims that, as the German marketing authority Werner Kroebér-Riel (1993) famously suggests, “[I]mages are quick shots in the brain” (Bilder sind schnelle Schüsse ins Gehirn). The assumption behind this idea is that images are processed by beholders subconsciously and emotionally, and that images are remembered much longer than, for example, text. There are various counterexamples for this general assumption about images, but of importance is certain widely employed reasoning as to why images are used in advertising in work to influence customer decisions.

In designing advertisements, advertisers inscribe intentionality into the artifacts created, in order to guide the behavior of those seeing them. The traps created are both models of their creators and models of their victims, of those to be trapped. Functional traps are not all-purpose devices; they have to fit the behavior of those to be trapped, their techniques of the body. A significant amount of marketing research, for example, is done for learning how customers use the kinds of products advertised, in order to attune both products and advertisements to customers’ behavior. When behavioral action is known, it can be modified with the aid of successful advertisements.

Take the case of After, a novel product advertised with the print advertisement shown in Figure 24. The pictorial elements, such as the product, the photograph of the woman, the headline, the logo, and the body text, are arranged such that the advertisement creates attention, making a person seeing it start a visual interaction mediated by the body’s look. The visual arrangement of the print advertisement, in connection with the human look, becomes a sensory transducer, a temporal assemblage of body and image mediated via the look. The beholder’s look, attentive to the advertisement, mediates information from the image to the body looking at it. If the information presented in the form of the advertisement fits the behavioral techniques and associations of the person looking at it, the advertisement might trigger interest, desire, and action. A marketer suggests the following technique for making effective advertisements: “With an ideal customer in mind, brainstorm as many things as you can think of that
might keep that person from pulling the trigger.” If the trigger mechanism is activated as intended, the advertisement creates interest and desire; the images and text in the advertisements are animated in the beholder; and the efferent system is activated, resulting in action at a distance, the purchase of the advertised goods.

The advertisement image is a translated presentation of its maker, a model of the “customer-hunter,” because it has to stand in for him. The image performs the customer-hunt for its maker, and in the case of advertisements, the advertiser usually employs an agency to create the trap. In these cases, the advertising image presents a temporary materialization of distributed actions between the client, the agency’s personnel, and any third parties involved in the design. The energy and work invested is immense in comparison to the time the victim of the trap, the targeted customer, usually interacts with the advertisement. As Gell (1999: 202) notes, “trapping decisively hierarchizes hunter and victim.” In the case of advertising, even more so, since the final advertisement is a condensed materialization of distributed action waiting to be triggered. The customer-hunter’s expertise is situated in the ad, in pictorial and material form, working as a surrogate body, a secondary agent.

In the After case, as can easily happen, the visual order of the advertisement does not match the behavior of the targeted market, and the trigger mechanism is not active.

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released. In a study with multiple methods, among them eye tracking, market research company Rogil found that the women targeted could not identify the advertised product as an alcoholic drink. They found the ad to be “rather irrelevant, incredible, not persuading, not interesting and banal” (Tobii Technology AB, 2009). Because of these results, the advertisements were redesigned so as to fit the behavior patterns of those targeted better. Behavioral information about those to be trapped was helpful in tuning the trap.

From this it follows that successful ads from the advertiser’s point of view are not only models of the customer-hunter but as much models of its victims, “represent[ing] parameters of the […] victim’s] natural behavior, which are subverted in order to entrap it” (Gell, 1999: 201). The victim’s behavioral responses are inscribed into the trap, with a trigger mechanism subverting them. The victims of ads, as with all traps, somewhat tragically get caught by their own actions, pulling the trigger leading to changed behavior.

But advertising traps are not lethal, nor do those trapped necessarily experience being caught by a functioning trap as negative. They often enjoy, for example, finding novel products, using them with ease, and buying them for themselves and as gifts to others. Additionally, advertisements are used in many commercial services to create revenue that enables services to remain active, pay employees, and offset other costs related to provision of a service.

**Constructing perceptual shifts**

The idea of advertisement images as traps, with an inscribed intention to modify behavior, follows the synoptic principle. Most advertisements are mediated quasi-interactive communication (Thompson, 1995), which means that the only reaction available to private citizens is a channeled one. Usually these reactions consist of consumption choices, preferences, and personal boycotts but only rarely of our own advertisements or other forms of behavioral traps.

People and groups taking a critical view of the current trends of globalization have begun to adopt a proactive response, using visual argumentation strategies very similar to those applied in advertising to bolster their criticism of capitalist market economies. These critical image acts make sense once we contrast them with the agency invested in advertising images.
Figure 25. Modifying images by fighting images: An advertising image “skulled” at Berlin’s Ostkreuz S- train station.

Figure 26. The eyes of the models depicted have been cut out in an intervention in synoptic images. Hackescher Markt, Berlin.

Here one's own message is highlighted by breaking with familiar forms of visual representation and by intentionally misformulating familiar concepts. For example, in a
Berliner Kindl product advertisement displayed at a train station in Berlin, a picture of the model’s face, which is inclined toward casual passers-by and maintains imaginary eye contact with them, has been reconfigured with aerosol paint into a skull (see Figure 25).

This relatively easy-to-perform critique, the image act, questions representation strategies employed by the advertising industry and thus the agency ascribed to specific images. In a similar case, the eyes that maintain “eye contact” between the random passer-by and the models turned into pictures have been removed by anonymous sign activists (see Figure 26).13

Argumentational techniques are applied to explain these pictures and their effects on society, emphasizing the subversiveness of these actions in opposition to hegemonic practices, such as synoptic advertising. Kalle Lasn, one of the founders of the Adbusters Media Foundation, notes this as follows:

Corporations advertise. Culture jammers subvertise. A well-produced print “subvertisement” mimics the look and the feel of the target ad, prompting the classic double take as viewers realize what they’re seeing is in fact the very opposite of what they expected. It cuts through the hype and glitz of our mediated reality and momentarily, tantalizingly, reveals the hollow spectacle within. (Lasn, 2000: 131–132)

This “cutting through” with the aid of the creation of a counter-image is a way of responding to the traps created in advertisements. Both strategies, regular advertisements and “subvertisements,” invest specific agency in the images presented. While both involve attempts to transform the behavior of bodies seeing these images, they are attempts to direct the transformation in different directions.

Some of the notions with which these kinds of critical actions are conceptualized include “culture jamming,” “communication guerrilla,” “tactical media,” and “rebel art.”14 Although these concepts have slightly different etymologies, they all articulate a fundamental opposition to hegemony, capitalism, or more specific targets through the reassembly of distinct signs to produce subversion. This opposition is usually described,

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13 The term “sign activism” is used to refer to the main methods of this “semiological guerrilla warfare” (Dery, 1993) – namely, appropriating signs such as “Shell” and altering them minimally in order to create “tactical interventions,” as in “hell.”

14 Naomi Klein (2001) also discusses the notions of “guerrilla art” and “citizen art.”
in accordance with Michel de Certeau’s description, as tactical, in contrast to the strategic practices of hegemonic actors. Tactical acts are assumed to reveal a hidden dimension to the society of spectacle (Debord, 1996) in which we would be living. To quote the Critical Art Ensemble, a group that holds regular workshops on tactical media,

    Tactical media is situational, ephemeral, and self-terminating. It encourages the use of any media that will engage a particular sociopolitical context in order to create molecular interventions and semiotic shocks that contribute to the negation of the rising intensity of authoritarian culture. (Cited in Thompson and Sholette, 2004: 115)

Although many different people in many, different places are engaged in this kind of sign activism and commenting on it, it is widely presented as a subversion of intended lines of association and as the creation of temporary autonomous zones that will set us free from market forces, or at least provide us with a pause for reflection in a media-saturated environment. Regardless of whether culture jamming really helps the propagators “stop the flow of spectacle long enough to adjust their set,” as Lasn (2000: 107) argues, it certainly can be seen as an emancipatory tool for political activists with new media employed for criticisms (cf. Cox, 2001; Woodside, 2001; Liacas, 2005).

    The methods used in visually articulating criticism of the visually articulated attempts by the advertising industry to seduce passers-by may be quite simple, as with the aforementioned examples and also in Figure 27, with the added moustache, a beard, eyeglasses, and the speech bubble explaining that “I’m a slave of the image.” In these cases, the agency ascribed to images in advertising is questioned with visual means; the trap is subverted. This visual intervention does not question the agency of images but has its interest in directing it toward novel directions. The trap is made explicit in its modification.

15 Following de Certeau, David Garcia and Geert Lovink (1997), in The ABC of Tactical Media, describe tactical media as follows: “The desire and capability to combine or jump from one media [sic] to another creating a continuous supply of mutants and hybrids. To cross borders, connecting and re-wiring a variety of disciplines and always taking full advantage of the free spaces in the media that are continually appearing because of the pace of technological change and regulatory uncertainty.”

16 Hakim Bey introduced the notion of “temporary autonomous zones” (Bey, 1994).
Interestingly, the modeling agency Storm Models advertises itself with visual argumentation (see Figure 28) very similar to that produced during the attacks in autumn 2003 by the groups named “Casseurs de Pub” and “Résistance à l’agression publicitaire” against the advertising industry in Paris. The picture of the model’s face in the Storm
models advertisement includes mock graffiti, imitating the kinds of added elements known from critical attacks against the advertising industry. The advertisers claim that it has “Models so beautiful, you’ll hate them for it” could as well be read as a critique of the modeling industry. The agency nevertheless plays an important role in the dissemination of certain faces reproduced over and over again in public urban spaces. Well-known figures Kate Moss and Sophie Dahl are only two of the more prominent models represented by the agency.

Thus, in the advertising world, similar methods are used to attract attention and to stress deviation. Statements such as “When everybody zigs, zag” and “Thinking outside the box” are more than familiar to every advertiser. Marty Neumeier, who wrote The Brand Gap: How to Bridge the Distance between Business Strategy and Design, puts it as follows:

Creativity, however, demands the opposite. It requires an unnatural act. To achieve originality we need to abandon the comforts of habit, reason, and the approval of our peers, and strike out in new directions.

In the world of branding, creativity doesn’t require reinventing the wheel, but simply thinking in fresh ways. (Neumeier, 2005: 76)

The methods used for visual argumentation, whether by sign activists or advertisers, often seem interchangeable. What they are visually constructing can be called an iconoclash, since we often do not know by just looking at the images what kind of intentions they entail.

[I]conoclash […] is when one does not know, one hesitates, one is troubled by an action for which there is no way to know, without further enquiry, whether it is destructive or constructive. (Latour, 2002: 8)

Playful approaches applied to signs do not in themselves produce subversive or conforming meanings. Knowledge of “correct” contextualizations has to be distributed in order to make the critique explicit.17

In this context, it seems appropriate to talk about a fight using images against images. Iconoclastic acts have always been more than just a destruction of images.

17 This is why campaign-related Web sites as part of sign-activist strategies (sometimes found only on closer examination) explicitly state what they are criticizing. Examples are http://www.deportation-class.com/ and http://www.shynet/niked.html (both last accessed on June 6, 2006).
Mitchell calls them “‘creative destruction’, in which a secondary image of defacement or annihilation is created at the same moment that the ‘target’ image is attacked” (Mitchell, 2005b: 18). These secondary images might become just as potent as the primary idols their purveyors seek to destroy. The pictures made are not only a part of a mediated reality surrounding us; they are also tools with which our reality is analyzed and materially transformed. Since we are the ones making images, these pictures gain their own agency, their own life, and start to form us and our surroundings.18

**Methodology**

In order to focus closer on these kinds of critical visual strategies, on the ways in which people use images as part of their mediated social action, and distribute these interventions with the help of networked cameras for others to see, I have conducted semi-structured interviews and done participant observation with 18 activists, mainly around Berlin, between late 2003 and early 2006, with some pauses in the study. The studied were at the time of the interviews approximately between 20 and 40 years old, and mostly male.

The questions in the interviews have focused on the ways in which the interviewed do this kind of image activism. Here, learning image activism, creating the actual images for distribution, the reasons for applying them, and explanations for one's actions are specifically focused upon. As these interviews have been conducted iteratively, findings in early interviews provided for changes in later interviews, such as explicitly asking the interviewed to answer criticisms that I found in related discussion fora regarding their practices, as well as to explicate dual roles that some interviewed did when navigating between being a "good" worker and doing image activism.

Additionally, all interviewed were asked to provide examples of their work that we used in order to provoke discussion. The examples provided helped also in seeing the variety in activist image use, helping to question too neat narrations of "the culture jammers," for example.

The participant observation was mainly conducted partaking in public seminars and workshops provided by people who regarded themselves as culture jammers, rebel

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18 Jonah Peretti (n.d.) ponders on his famous e-mail correspondence with the Nike company in which he tried, without success, to get the word “sweatshop” printed on a pair of Nike sneakers: “My Nike media adventure was mostly an accident […] I never expected the dispute to generate so much attention. The Nike Sweatshop email took on a life of its own and sometimes I felt like I was just along for the ride.”
artists, communication guerrilleros, or people involved in tactical media. These provided also good venues for contacting people to be interviewed, and after each interview I received help from those interviewed in order to find people they thought to be of interest for this work. In a few cases I was kindly invited to spend more time with those interviewed, which I usually took advantage of, seeing thus image activism in a broader spectrum.

Since at the same time that I did my interviews others did so too, for example gallerists, but also activists themselves interviewing each other, I have also used these interviews as part of the analysis. The sources of the interviews published elsewhere, and not conducted by me, are mentioned in each case, and also listed in the references.

All names of those I have interviewed have been changed in order to provide for anonymity. In the publicly available interviews I have used the names provided there. Also here the names provided are often pen names.

In the following I will first focus on culture jamming as a critical strategy, after which the ways in which activists explain their reasons for engaging in image activism are explored closer. The findings are discussed directly with related literature available, the following presentation differing thus somewhat from the first three case studies.
Culture jamming as a critical strategy

Culture jamming, the most famous of the concepts mentioned above, describes an attention-arousing manner of oppositional reading and meaning construction. The concept was born in an environment critical of current trends of globalization within U.S.-American counterculture. The California group Negativland coined the term “cultural jamming” in 1984 (Negativland, 1985), using the concept to portray alterations of outdoor advertising and similar critical manipulation of media content exposing the traps set for gaining customers. The concept was popularized by Mark Dery, whose articles were published, among other places, in the New York Times and Adbusters. He explains:

Culture jammers often make use of what might be called “guerrilla” semiotics – analytical techniques not unlike those employed by scholars to decipher the signs and symbols that constitute a culture’s secret language, what literary theorist Roland Barthes called “systems of signification”. These systems, notes Barthes in the introduction to Elements of Semiology, comprise nonverbal as well as verbal modes of communication, encompassing “images, gestures, musical sounds, objects, and the complex associations of all these”. (Dery, 1993: 8)

The idea behind culture jamming is to produce dissonant information content that is disseminated into a mediated communication cycle without destroying the communication cycle itself. The intention is to construct perceptual shifts that awaken

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19 For an introduction to the concept of the communication guerrilla, see autonome a.f.r.i.k.a. gruppe, Blisset, and Brünzels (2001) and Kleiner (2005) and the blog http://kommunikationsguerilla.twoday.net/ (last accessed on June 6, 2006). For “tactical media,” see Garcia and Lovink (1997) and http://www.nyu.edu/fas/projects/vcb/definingTM_list.html (last accessed on June 6, 2006). Finally, for “rebel art,” see http://www.rebelart.net/ (last accessed on June 6, 2006). These concepts have been consciously chosen instead of culture jamming, and some of the propagators stress the differences between their own concepts and culture jamming. Still, many of the techniques and actions described in this paper are, depending on the subjects, described as culture jamming, tactical media, communication guerrilla acts, or rebel art; as none of them; or as all of these. Because I want to stress the need to treat the signifiers and the signified as separate entities, I often use the term “sign activism” to refer to the actions behind the aforementioned concepts. It is important also to stress the difference between academic writing and direct action. As one of my culture-jammer interviewees put it when I asked him how he defined culture jamming, “I’m not interested in defining it, academizing it, what you’re doing. I’m not putting it [academizing] down. Culture jamming is a process like graffiti is. The term eventually was born in the U.S., because we have so much pop culture. The term was coined by Adbusters, although Negativland claims to have invented the term. I don’t give a fuck; it doesn’t interest me. Do it anyway. Because you’ve read about it, you’ve heard about it, because you’re bored of the people buying things because of their brand name, of billboards in your face and jingles. I have every right to protest. […] I’m more into the skeptical part, fucking things up, opposed to clearing things up.”
the receiver to the absurdity of a materialistic lifestyle and its propagation.\textsuperscript{20} The advertisers’ seductive traps are made explicit.

In their entry in the *Blackwell Encyclopedia of Sociology*, Jay Handelman and Robert Kozinets (2007) define culture jamming as “an organized, social activist effort that aims to counter the bombardment of consumption-oriented messages in the mass media.” They nevertheless do not take the conflicting interpretations and definitions among those considered to do culture jamming sufficiently into account, thereby favoring a specific reading of a practice in the making. This is why the following discussion offers various prominent interpretations.

Naomi Klein has devoted a chapter to culture jamming in her *No Logo*, a book that some journalists have even called the globalization critics’ bible. Here she presents some of the methods used. She observes that “[a]ttempting to pinpoint the roots of culture jamming is next to impossible, largely because the practice itself is a cutting and pasting of graffiti, modern art, do-it-yourself punk philosophy and age-old pranksterism” (Klein, 2001: 282). She nevertheless does name several sources that are important for understanding it, such as Dada, surrealism, conceptualism, and situationism, as well as specific actors using the methods of culture jamming: the Billboard Liberation Front (BLF), active in San Francisco; BUGA-UP (Billboard Utilizing Graffitists Against Unhealthy Promotions) in Australia; and Joey Skaggs, who is active in New York.

Perhaps somewhat surprisingly, Klein herself has a very clear idea of a correct form of culture jamming. Her investigations into the history of the practice and its ideas led her to documentary photographers in the 1930s who were able to highlight societal maladies by visual means.

The hard-core culture jammers of the era were not the Ballyhoo\textsuperscript{21} humorists, however, but photographers like Walker Evans, Dorothea Lange and Margaret Bourke-White. These political documentarians latched on to the hypocrisies of ad campaigns such as the National Association of Manufacturers’ “There’s No Way Like the American Way” by highlighting the harsh visual contrasts between the ads and the surrounding landscape. (Ibid.: 305)

\textsuperscript{20} Steve Mizrach (n.d.) notes, “Culture jamming is more than just a clever game. In an era in which conspicuous consumption is slowly eating up the entire planet, it may just be the key to survival itself.”

\textsuperscript{21} *Ballyhoo* was a satirical magazine published in the U.S. during the Great Depression. It used methods of advertising in order to criticize the promises provided in ad campaigns. The magazine also contained some instructions on how to create these kinds of counter-ads (Klein, 2001).
And currently the real culture jammers would be the people who see culture jamming as a tool in a broader fight against a logo culture and the profit-seeking of large enterprises.

[T]he people scaling billboards are frequently the same ones who are organizing against the Multilateral Agreement on Investment, staging protests on the streets of Geneva against the World Trade Organization and occupying banks to protest against the profits they are making from student debts. (Ibid.: 309)

Referring to Evans, Lange, and Bourke-White, as well as to those image activists working on a larger scale against actors of the global economy, Klein distinguishes “correct” culture jamming from a “wrong” one. Thus Klein’s argumentation has a part in narrating the history of countercultural activities as well as creating a sense of communality.

Lasn has drawn special attention to the term “culture jamming” with the publication of his *Culture Jam: How to Reverse America’s Suicidal Consumer Binge – and Why We Must* (2000), which has been translated into various languages. He additionally uses the term in the magazine *Adbusters*, which he co-founded. Lasn has taken the concept as, in a sense, his trademark and tries to raise a new generation that uses the methods of culture jamming as a taken-for-granted form of living everyday life. Lasn’s argument is interesting because he sees culture jamming as the next big social movement. He claims that we all live in a cult that we have not been able to choose ourselves. The cult is produced in synoptic constellations with the advertising campaigns of global companies and forces us to use specific concepts in our communication that refer to trademarks or slogans invented by advertising professionals. Examples would be asking for Blistex in particular when wanting just any sort of lip balm or using the ad slogan “Because I’m worth it” or “Just do it” when communicating with other people. Lasn cites Marshall McLuhan in a very slogansque way: “World War III will be a guerrilla information war, with no division between military and civilian participation” (ibid.: no page number). Lasn compares culture jamming with Zen Buddhist practices:

[…A] Zen master may suddenly throw you a wildly cryptic, inappropriate, even obscene answer to your harmless query. He might answer your question by removing his shoe and placing it on top of his head, or throwing it at you […]. The Zen master is trying to break your trance. He’s showing you a new path to the waterfall. (Ibid.: 107)
The intention is to show the material, physical world in a new light:

[... ]t is suddenly seeing hell in a world you thought was heaven. That world is the world of summer blockbusters and $5 lattes and Super Bowls in which a thirty-second ad slot sells for $1.5 million – the spectacular world of the American Dream, a world you were raised to believe was the best of all worlds, but a world that collapses under scrutiny. (Ibid.: 107)

Lasn complaints about the mediation of communication, which in his view leads to the mediation of the individual. A mediated individual cannot find true and authentic experiences, according to Lasn (ibid.: 45): “Nothing that happens becomes real until you can make it fit into the spectacle, or make the spectacle fit into it.” Following Guy Debord, Lasn sees our cultural environments as organized around spectacles, and thus our everyday communication environments as spectacular. Central to Lasn’s arguments, as for many others involved in culture-jamming-like activities, is that the perceived pressures coming from synoptic constellations are responded to. The responses are formulated not only in words but also with images and sound, using existing communication infrastructures and media for doing so.

Lasn’s dramatic form of address, the *Adbusters* magazine’s high price and glossy paper, and the straightforward theory of communication put forth have led many others using the methods of culture jamming to criticize Lasn for biasing the term. Among these are members of Negativland and authors of the “handbook of the communication guerrilla.”

The historian Mark LeVine (2003) tries to include in the use of the “culture jam” concept improvisation known from the world of jazz, bringing together people and things from various backgrounds, without having to decide beforehand who is good and who is bad.

While a glance at these very American jams and “alternative” communities (from tree sitters to radical unionists) testifies to their originality and creativity, I argue that ultimately they represent individual or isolated acts of cultural resistance. [... C]ulture jamming American-style might become the Gen-Y equivalent of bra-burning[;] such acts of cultural resistance to the corporate branding of America are still dwarfed by the power of corporations to co-opt even the most
critical interventions. [...] Yet if we can jam in the musical sense of the word – that is, bring together diverse and even dissonant voices to compose a truly world music – we can widen conversations, shed outmoded geometries, stereotypes and paradigms, and develop greater compassion for both the victims and beneficiaries of globalization.

In doing so, LeVine tries to transform the juxtaposition of “us” and “them” into a need to bring different kinds of people together who can question existing scripts for action, coming up with situationally successful novel ideas. In this understanding, culture jamming is not a way to wake others from a trance or false consciousness but about creating spaces where the most diverse actors can think about and develop their individual and common futures.

In looking at interviews done in Germany with interventionists who were asked to define culture jamming, it quickly becomes clear that the concept in itself is used in various, quite different ways (cf. Nitewalkz, 2007b). Some are not interested in defining their actions, while others see culture jamming as the cheekiness to use publicly circulated signs and symbols for one’s own purposes without asking for various permissions. It is playing with attention and perceptions, recombining existing elements or adding something slightly new to them. One of those interviewed defined it as people’s natural instinct simply to take existing things, manipulate them, and assemble them anew.

A character often described as a culture jammer, Hans Bernhard, who has been involved in highly successful actions such as VoteAuction.com, distances himself from the concept completely:

I hate the concept “culture jamming,” because you can group everything around it. I hate “activism,” because it’s so politically connoted. I think that “hacktivism” really sucks. For my actions, I can only accept “actionism.” That’s exactly the kind of action and art in the history of art that I represent. Actionism has a political context in its history, but the people were rather into LSD kinds of things and that’s what we are as well. Most street artists are way too stubborn and
represent a crude and badly performed activism. (Nitewalkz, 2007a – my translation)\textsuperscript{22}

My interviews with visual interventionists conducted mainly in and around Berlin provide similar results, where culture jamming is mentioned by the interviewees at all. Some did not even mention “culture jamming” when discussing and explaining their interventions. This gives evidence of loose networks and communities of practice that do not necessarily share a common agenda but do use similar methods. Lasn’s claim of culture jamming as the next social movement should, therefore, be treated with caution, as well as clear definitions in encyclopedias.

We have various terms for designating image activist tactics and strategies. As for many other political activists, the authors of the \textit{Handbuch der Kommunikationsguerrilla} stress that culture jamming is just one method among many (autonome a.f.r.i.k.a. gruppe, Blisset, and Brünzels, 2001). They have chosen “communication guerrilla” as a media educational umbrella term. The authors focus on separate communication situations, whereas the specific media used for communication are of secondary importance.

Marcus Kleiner (2005) has argued, referring explicitly to communication guerrillas, that social criticism uttered with the methods of a communication guerrilla can actually enrich scientific media-critical discussion. Since textually uttered criticism usually remains of interest only to small circles of actors, momentary appropriations of public symbolization processes and media practices can give greater attention to other than commonly publicly visible viewpoints. This raises questions of the media used for critique, as well as power relations related to them. The elites of one medium often have to give the floor to elites of another one. How is criticism to be expressed, via which media, and who sees him- or herself as the subject of criticism – depending on each medium used? Kleiner bemoans that media-critical literature is still little interested in the specific cultural techniques necessary for using media, as well as the limiting and facilitating possibilities of specific media.

\textsuperscript{22} For a different translation, see \url{http://www.culture-jamming.de/interview1e.html} (last accessed on February 12, 2010).
Perhaps one of the best-known actions described as culture jamming is the Barbie Liberation Organization of the group RTMark (cf. Frazier, 1998). Members of the group exchanged the speech devices of Talking Dude G.I. Joe and Teen Talk Barbie and returned the altered toys to store shelves. This particular part of the action has received its own name, shop dropping, and an exhibition devoted solely to actions of this kind opened in New York in April 2006.

Exchanging the dolls’ speaking devices led to interesting intersemiotic translations that are familiar from found-footage films: Teen Talk Barbie shouted, “Vengeance is mine!” while Talking Dude G.I. Joe said, “Let’s plan our dream wedding.” Stickers urging shoppers to “call your local TV news” were stuck on the boxes in which the dolls were sold. News agencies received confession videos aimed at creating media attention. These actions were necessary to create a culture-jamming-like viral strategy that would work “efficiently.”

These kinds of actions lead to a subversion of intended lines of association such as the product designers at Hasbro and Mattel had in mind. At the same time, new clusters of association are created that are compatible with the original producers’ formal criteria. Often the instructions on how to perform the actions are shared openly in order to lower the threshold for producing materialized meanings. Several handbooks and shorter texts have been published that explain these DIY strategies (e.g., Peretti, n.d.; Lasn, 2000; autonome a.f.r.i.k.a. gruppe, Blisset, and Brünzels, 2001; Thompson and Sholette, 2004).

In a press release, RTMark highlights a central theme of conflict that arises when these strategies are applied: “Corporations invade our lives with products but forbid us to use [them] – in our art, or in any way they don’t want. This just doesn’t make sense.”

One of the main problems for companies producing and providing commodities and services is that it is becoming increasingly easy to copy and sell their products. Copyrights are used to retain power of interpretation and sales rights. However the exponential growth of similar products may well ruin the value of their commercial

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23 See http://www.shopdropping.net/ (last accessed on March 28, 2006; launched on April 1, 2006).
24 See http://rtmark.com/legacy/deconstructingbeck.html (last accessed on November 7, 2005). A similar argument was used in a press release at the Nikeground action in Vienna: “Nike invades our lives with products and ads but then forbids us to use them creatively”; see http://0100101110101101.org/home/nikeground/story.html (last accessed on July 6, 2006).
goods. Strict regulations are in place for the use of trademarks, colors, fonts, and even entire sentences.\textsuperscript{25}

The Italian restaurant Cibo Matto (literally, mad food) at the Hackescher Markt in Berlin, for instance, was required to change its name after lawyers for the German Tchibo chain went to court and convinced the judge that there was a real risk of consumers confusing the two companies on account of similarities in pronunciation – which was then interpreted as a limitation of consumers’ right to a clear communication environment.\textsuperscript{26} Tchibo feared that its traps set with care would not be triggered anymore as intended.

One of the main arguments of many sign activists against strict immaterial property laws is as follows: Our lives should not be structured in such a way that every color, sign, or name has an unambiguous meaning, especially not if commercial companies are the main ones seeking to secure exclusive use of protected trademarks. By means of culture jamming, expectations are directed towards the reassembly of communicational elements reserved for the few. These reassemblies are made explicit in the reproduction of advertisements, movies, and commodities.

The use of methods similar to advertising, especially those known as below-the-line, has to do, on the one hand, with changes in the labor market.\textsuperscript{27} While the production of goods is increasingly being outsourced to industrializing countries, the production of communications information and signification seems to be an ever more important mode of generating added value in so-called post-industrial countries. On the other hand, many culture jammers have been involved with classical advertising campaigns or still are, in addition to their sign activism. As Belting (2005a) points out, it seems that only those who actually know how images work are able to fight them effectively.

Although many of these practices have features in common with forms of action in the art world, many culture jammers interviewed do not work as artists or see themselves as such. Rather, these actions are embedded in a context of political activism aimed

\textsuperscript{25} See Hietanen, Oksanen, and Välimäki (2007) for a judicial discussion related to this issue. Mylly, Lavapuro, and Karo (2007) again discuss the right of action in relation to trademark legislation.


\textsuperscript{27} “Below-the-line” refers to means of advertising that do not use traditional media such as the press, radio, television, cinema, or outdoor advertising for promotion (Koschnick, 2003).
against “hegemony” and “cultural grammar,” contesting existing orders of the visual. The sign activities are only a part of often more complex modes of political action.

Most sign activists are well aware of the relevance of pictures that can be transmitted easily to mass media or at exhibitions, of the need to historicize their actions and thus to build a mythical past. This has generated a tense combination of artifacts, which are consciously sent into mediated cultural circulation. These artifacts are willingly received in the art world. Exhibitions have been arranged at the Kokerei Zollverein in Essen, at the Center of Contemporary Culture in Barcelona, at the Neue Gesellschaft für bildende Kunst and the Galerie Neurotitan in Berlin, at the Lentos Kunstmuseum in Linz, and at the MASS MoCA in Massachusetts, to name just a few of the recent venues. A win/win situation is created, which allows activists to receive grants and lecture fees and to participate in socially respected fora and thus become part of the collective memory of “art.” Galleries and museums gain access to new material that allows them to position themselves or that they can use for scientific research or to initiate public discussion. The equation includes a judicially gray area, which every now and then is deliberately violated.

Deportation class

One of the most sophisticated efforts in this field has been the kein mensch ist illegal (“no human is illegal”) campaign against the expulsion of illegal immigrants from Germany, which has also found its way into art museums (e.g., in Silke Wagner’s bürgersteig project).

The network was created in 1997 in connection with Documenta, a survey of contemporary art in Kassel, Germany, with some of the actors having come together much earlier in various organizations and actions. The deportation class campaign was launched in March 2000 against the only really image-sensitive actor in the whole expulsion process. It was triggered in May 1999 by the death of a Sudanese refugee, Mohamed Aamir Ageep, on a Lufthansa flight, which mobilized dissent. Ageep was to be deported from Germany to Sudan. German border officers had tied him up, put a
motorcycle helmet on his head, and pressed him down in his seat for so long that he suffocated.28

The network’s campaign, *Deportation Class - gegen das Geschäft mit Abschiebungen* (“against the business of deportation”), went public at the International Tourism Fair in Berlin (ITB); at airports in Hamburg, Hannover, and Munich; and at the Lufthansa training center in Frankfurt am Main. The aim was to make sure *kein mensch ist illegal* had a presence at all possible points of sale and at stores operated by the Lufthansa group and its agents. The purpose was not to mount a boycott of Lufthansa but, instead, to get the carrier’s passengers and staff to question the German government’s deportation practices and to act against those practices within the framework of international law. Since neither the police nor customs officers of individual nation-states have jurisdiction in international airspace, the flight captain is in the position to refuse to take a deportee on a plane for reasons of flight security.29

To create a visual look for the campaign, a poster competition was organized that attracted almost 30 entries. The jury selected motifs created by Matthias Weinzierl (see Figure 29), which later appeared in many public city spaces, across Germany. At the same time, a Web site was created that, like the poster, could easily have been confused with official releases from Lufthansa.

Activists painted a van in the Lufthansa livery and dressed in uniforms resembling the official Lufthansa corporate identity (see Figure 30). They bought Lufthansa shares and so gained the right to attend and speak at general assemblies. Their actions exposed and laid bare Germany’s deportation policies.30

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29 Ibid.
30 Ibid.
Figure 29. A “deportation class” poster created by Matthias Weinzierl, distributed later in various cities, especially in Germany.

Figure 30. An image of “deportation class” activists dressed according to the corporate image of Lufthansa employees.

Campaigns such as these are highly asymmetric conflict constellations. As one of the activists remarked, “A classical guerrilla situation – albeit with the disadvantage that activists do not swim like fish in water” (e-mail correspondence, 2005). They needed to learn the proper rules of conduct, manners of speaking, and the whole language and concept apparatus as well as the logic of the processes.
A second elaborate example is a public intervention called Nikeground carried out by Vienna’s Public Netbase and Bologna-based Zeroonedotorg at Vienna’s Karlsplatz. The actors claimed to be part of the Nike company and presented their argument that the well-known Vienna Plaza would be renamed “Nikeplatz,” using visual means borrowed from the corporate world. For the purpose of their argument, or image act, the actors built an information booth, donned clothing reminiscent of Nike’s corporate identity, and distributed information regarding the change of the name of the plaza. Their publications “cited” Phil Knight, Nike’s chief executive officer at the time:

Think of the name of squares and streets, in fact they’re the brands of a city. Politicians that nobody knows, old generals and unknown artists: those names are not suited to represent the spirit of [a] modern metropolis.31

Some of the casual passers-by didn’t seem to care too much about Karlsplatz being renamed for a large producer of sports equipment. In general, however, they resisted the idea. A part of the activists’ strategy was to create an organized protest and a phone line to which complaint calls were directed. They started a non-governmental organization and spoke in its name criticizing Nike’s actions. These acts ensured that the stir became news, and the actors got a lot of free media coverage and thus a large audience for their intervention. On the Web page of Zeroonedotorg, Franco and Eva Mattes present themselves as con artists who use “non-conventional communication tactics to obtain the largest visibility with the minimal effort.”32

Although the various participants in the intervention definitely had differing motives for participating in the Nikeground project, the news coverage in particular framed the action as a critique of capitalism, consumer culture, and the branding of public urban spaces.33 Konrad Becker, the director of Public Netbase during the project, explained his motives for taking part in the campaign:

It is our duty to directly intervene into urban and media space, to bring up the issues of symbolic domination in public spaces by private

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31 http://www.nikeground.com/ (last accessed on September 18, 2006).
32 http://0100101110101101.org/index.html (last accessed on September 18, 2006).
33 A collection of press reviews can be found at http://0100101110101101.org/home/nikeground/media.html (last accessed on September 18, 2006).
interests. We see Nike Ground as a statement for the artistic freedom to manipulate the symbols of everyday life.34

Jean Baudrillard has suggested similar actions, in order to test societies’ reactions to perfect simulacra: imitating theft or robbery. The imitation would be close to the real and similarly a simulation of the real – just as in the deportation class and Nikeground actions. Baudrillard nevertheless concludes that this is impossible: a simulation can never be met as simulation:

You won’t be able to do it: the network of artificial signs will become inextricably mixed up with real elements (a policeman will really fire on sight; a client of the bank will faint and die of [a] heart attack; one will actually pay you the phony ransom), in short, you will immediately find yourself once again, without wishing it, in the real, one of whose functions is precisely to devour any attempt at simulation, to reduce everything to the real – that is, to the established order itself, well before justice and institutions come into play. (Baudrillard, 1994: 20)

The simulation cannot be met as simulation, nor followed as simulation. It enters into established visual orders and so cannot break the scripts of action in the real. Both Nike and Lufthansa sued the activists for using their corporate identity. The projects could have been seen as much as a comment on the visual orders and identities constructed by the companies themselves, arguing by similar means. This would have enabled creation of a balance from the asymmetrical communication relations existing in the world of advertising and marketing. Only a few companies agree to this. An example comes from General Motors, which gave users the opportunity to create their own advertising campaigns for their Tahoe SUV (sports utility vehicle). Over 22,000 user-created ads were made, of which some were very critical of SUVs in general.35

34 See http://0100101110101101.org/home/nikeground/media.html (last accessed on September 18, 2006).
35 A discussion of the topic has been documented at http://www.treehugger.com/files/2006/04/gm_responds_to.php (last accessed on September 18, 2006). For some of the critical ads, see http://news.cnet.com/1606-2_3-6056633.html?tag=ne_vid (last accessed on September 18, 2006).
Doing image activism

Identity correction

Many activists speak of these kinds of methods as “identity correction” (e.g., Bichlbaum, Bonanno, and Spunkmeyer, 2004), where identity theft is driven not by interests of personal gain (as it is in the case of phishing, where the aim of e-mail scams or faked Web sites is to steal people’s banking codes) but to adjust the image held and propagated by certain companies in society. The politically weak adopt the existing communication structures built by the more powerful (in terms of money, visibility, legislative influence, etc.) and speak with their voices. If successful, as Klaus Schönberger (2005) points out, false information may create true events, forcing the companies attacked by activists to make statements about events they would rather avoid mentioning. The poverty of context when mediated interaction is used for socializing makes it easier for fakers to speak in the name of political adversaries or corporations. Quite often these actions rely on a combination of electronic appearances (Web sites, e-mail, etc.) and real-life presences and therefore do not remain in the realm of imaginary virtual realities.

It seems that today, with the growing significance of mediated social communication, it is necessary to produce public images by using advertising means in order to keep up with modern conflict culture. The methods of advertising are an increasingly important part of social argumentation, with their own rules of argumentation. The effects of advertising are nevertheless not causal, so they have to be abducted from various sources. Usually in studies of the effects of advertising the visibility and publicity an ad has received are quantified, how well people remember specific advertising or sales is examined, and a brand’s image before and after the launch of an advertising campaign are compared (cf. Schimansky, 2004). With advertising becoming a common form of presenting one’s arguments, creating attention has become more difficult. This is reflected in some marketing literature in which marketing overkill is discussed (e.g., Herrmann and Moeller, 2006). The wealth of advertising messages creates new challenges to communicating one’s own argument in an economy of attention. Here successful activist strategies are often turned into product advertisements, as, for example, done in guerrilla marketing.

Interestingly, people with diverse activist backgrounds have reacted to the significance of mediated social communication not only via culture jamming but by creating their own advertising agencies, such as MemeWorks or PowerShift, calling...
themselves agencies for socially responsible communication. Also inside the advertising world there have been calls for, and actual implementations of, self-regulation, which provide a contact point for complaining about specific advertisements. The European Advertising Standards Alliance functions as a European umbrella organization for issues of self-regulation. It published a charter on advertising self-regulation in 2004 and maintains information on national issues related to self-regulation (European Advertising Standards Alliance, 2005).

Learning image activism

Many who were interviewed had learned interventionist techniques early on, and culture jamming gives them a field in which to experiment, with some organizing workshops and seminars in order to teach these techniques further.

The right to self-expression in urban environments that are often reserved for other societal actors is an important impetus for sign activism in the first place.

I as an individual cannot define myself before I have expressed myself in some form. Especially one like me, who works visually, wants to express oneself visually, and in public space this works especially well, since it is used for very different forms of visual communication. Then arises the claim to convey oneself visually, since one works visually. (Franz, age 29)

What is problematic for many of those interviewed is the asymmetries in communication, with the apparatus favoring specific kinds of visual orders.

Actually placarding wildly, as well as painting on advertising space outdoors, should not be criminalized. But it is. If someone hits me continuously with some kinds of images, then I should have the right to comment as well. With my own posters it’s the same: if someone tears them down, if people write something on them or draw something inside them […] I understand it always as a validation of my work. (Sixla, age 33)

Some had specific moments in life at which they learned that they could do things differently than prescribed. For example, Georg recounted a story from his childhood:
When I was eight years old, we had a nanny I built an airplane with. I wanted to paint the plane in camouflage, and she asked me, “Why don’t you paint it pink?” That did work as a kind of igniter for me.

(Georg, age 32)

The kind of presumed certainties in doing things as suggested are still questioned by him and many others of the interventionists. Georg continues:

I’m always on a search with my work. Currently I’m taking a vacuum cleaner apart. I don’t know what direction it’s going to take, but I just start with it. In order to get close to the material. […] Usually my works are reflections on my surroundings that materialize in one way or another. Currently I’m again on a search. I have a family, a child; work; am employed; and try to develop my own projects. I’m a seeker.

Others focus on culture jamming and similar activities as something one grows into because mass culture is so permeated with things to oppose. An interviewee who grew up in the U.S. was especially outspoken in expressing his discontents with existing orders:

Nothing happened to me. I’m white middle-class. I’m not an especially beat-up person. It’s not like a star came down and I saw an angel. The fabric of American life is so commercialized that anyone with a little bit of sensitivity would oppose that one. My insights aren’t any deeper than anyone else’s. I just started to do what many people do: establish a critique. My critique is more visual.

All of the reasons given stress that initially the impetus for image activist practices was a reaction to existing visual orders, either learning to “do differently,” as in the case of painting a model plane pink rather than in the camouflage suggested, or in order to seize a part of pre-communicated public space for oneself.

**Becoming an image for mass mediation**

Culture jamming and visual interventionism are helpful for our discussion of the use of digitally networked cameras, since here we have in many cases a strong connection between bodies using images both *in corpore* and in effigy in order to achieve novel results. Cameras are only a part of these actions, usually for interventionists to document
and distribute their work, used for creation of a mass-mediated image, just as cameras are also only one part of the social interactions described in the material on digital snaps and the film era as part of the “Kodak culture.”

Although some of those interviewed were happy with creating “situations” that do not get wide mass-media distribution, for many a successful campaign was one that raised attention to issues considered important and in which information on the action was distributed visually and by other means over a vast communication network. One of the aims of sign activism is to generate free media coverage. To do so, bodies have to serve as images in corpore that can be depicted in effigy and later distributed in mass media, but as well in personal blogs, on social networking sites, or in copycat actions on one’s own body.

An example of how alternative information is disseminated is provided by a picture published in Finland’s leading daily, Helsingin Sanomat, in January 2006 (see Figure 31). With the action depicted, Fathers 4 Justice wanted to draw attention to the situation of parents and grandparents in the U.K. who have no legal right to see their children and grandchildren. In this case, an activist dressed as the cartoon and movie figure Batman scaled the front of Buckingham Palace. He appeared in public as an image in corpore to serve as a model for possible pictorial reproduction in mass media. His actions were geared toward mass media by crossing conventional societal boundaries of conduct. With dressing up as a cartoon figure, the message conveyed was set humorously. Humor
is an increasingly popular means of attracting attention, interest, desire, and action, as the familiar marketing formula AIDA suggests.  

Another successful example is the Yes Men. When they perform their actions of dissent, such as the famous keynote speech delivered on the 16th of August 2001 as a WTO representative at the conference in Tampere, Finland, called “Fibres and Textiles for the Future,” the main aim of the performance is to be pictured by professional news photographers. The Yes Men commented on this in one of their documentary films:

All these magazines and newspapers have articles on the Yes Men. That's why we're doing this. This is why we go to the conferences. It's not for the 200 or the 100 people that might see us give the lecture. [...] The reason we do this is that people who read *Bizarre Magazine*, the *New York Times* or Harper's can read about it in the main stream press.  

(Ollman and Price, 2005: 46 minutes)

These practices of creating disorder are oriented around pictures, and around anticipated mass-media reactions. Thus visual disorderings are multilayered image acts, disordering existing images and creating new images for circulation in mass media.

Some of these symbolic wars are fought out in courtrooms, although many companies that come under attack today do seem to be responding somewhat more cautiously – in particular, avoiding contact with journalists. Communicating first asymmetrically via synoptic settings by setting up traps, then bringing people to court when they use the same images for other purposes is increasingly disdained.

Appropriation strategies based on disguise, *détourner*, and other quite complex and often playful approaches to signs make it difficult to categorize the people who actually use them in terms of stereotypes, often providing us with an iconoclash, a situation in which we do not know without proper contextualization how to respond. Since the relevance of direct face-to-face-contact seems to be declining and as we communicate more and more often through different media, it seems that we will be seeing more of these kinds of disputes in the future. Learning the skills needed for creating mediated attention has become easier through handbooks, user-friendly software, and declining production costs of the necessary material.

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36 Woodside (2001) has taken a special interest in the interconnections between humor and culture jamming.
An important notion in encouraging people to participate in these kinds of actions, or to create their own subversive actions besides sharing the knowledge of how to do so, is that of the “meme” (e.g., Boyd, 2002). This term was coined in 1976 by evolutionary biologist Richard Dawkins (2006) in *The Selfish Gene*. According to Dawkins, human beings are “survival machines” for genes and their cultural counterparts, memes. Memes are described as contagious ideas that through replication, mutation, survival, and competition compete for a share of our minds. Since this first description, Susan Blackmore, Daniel Dennett, and others have elaborated on these ideas and memes have themselves become a meme, a notion replicated in an advertising-jingle-like manner by word of mouth. The popular electronic-culture magazine *Wired* had a special section on memes in the style of “what’s hot, what’s not,” and currently promoters of sign activism such as Adbusters and Memefest explain what they do to their readers in terms of memetics, the theoretical structure behind the word “meme.” To quote the Memefest Web site:

Theorists of Memetics (Dawkins, Blackmore) propose that memes are autonomous as they travel (and take root) from one individual to another but these same theorists also allow the possibility of deliberately creating and spreading Memes. [...] In an information society, modern battles are fought less with weapons and more with ideas. Since Memes can influence behaviour and change culture, they are the new weapons which are used to establish and dethrone ideologies.

The ideas of Dawkins on evolution are among the materials we have found not discussed when memes and their importance for understanding culture jamming are highlighted. Lasn speaks of meme wars as today’s most important battlefield, maintaining that “[w]e build our own meme factory, put out a better product and beat the corporations at their own game” (Lasn, 2000: 124).

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37 Richard Semon had similar ideas at the dawn of the twentieth century. Interestingly, his ideas had an important impact on Aby Warburg, who in the German-speaking world is considered one of the founding figures of “image science” or *Bildwissenschaft* (Hensel, 2007; Warburg, 2000; Gombrich, 1981).

**Answering criticisms**

A common criticism faced by sign activists à la culture jamming is that the language of conflict used is an adaptation to pre-existing fields of signs and thus to methods commonly used to produce attention in post-industrial societies. To subvert advertising methods by the means promoted by culture jamming necessarily means using the language of advertising, although in many cases in new and imaginative ways. This would only foster an economy based on attention (Franck, 1999), helping to rectify any flaws existing in consumer capitalist techniques of persuasion (cf. Carducci, 2006).

The Adbusters Media Foundation has compiled instructions to help readers of the *Adbusters* magazine and its Web site build their own advertising campaigns. These are very similar to instructions found in the world of advertising. On headlines, for example, they say the following:

> The most important thing to remember here is that your headline must be short, snappy and must touch the people that read it. Your headline must affect the reader emotionally, either by making them laugh, making them angry, making them curious or making them think.

Nevertheless it is important to note that, although the language used to promote ideas is often similar, it is used for different purposes by advertisers and sign activists. In classical advertising, the object is to increase sales volume; in culture jamming it is to change communication practices and to criticize certain consumption patterns. Both are set as traps, but the intentions behind them differ significantly.

A second criticism is that the world of advertising itself is appropriating the methods used by culture jammers (Frank, 1997; Heath and Potter, 2004). New ways of generating attention for critique are taken up subsequently by advertising agencies. This muddies the differences in methods used between those who are criticizing vis-à-vis those who are being criticized. What follows is an iconoclash.

Recently there has been a great buzz in advertising agencies around “guerrilla marketing” and “viral marketing.”

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39 For critiques, see, e.g., Frazier (1998), Klein (2001), and Carducci (2006).
40 See http://adbusters.org/spoofads/printad/ (last accessed on July 6, 2006).
41 “Alternative media, by any other name, including word-of-mouth, is a confusing collection of attempts to reach the consumer while bypassing traditional advertising vehicles. Some refer to it as buzz marketing. Others prefer street marketing, guerrilla marketing, renegade marketing, virtual marketing, ambush marketing, vanguard marketing, ambient marketing, covert marketing, under-the-radar marketing, below-
University of Witten/Herdecke, recently introduced the notion of “cultural hacking” (Liebl, 2004; Düllo and Liebl, 2005) to try and convince companies of the benefits of letting other people play with the signs they themselves had created.

It is far more effective to ask how much our own concepts can take and how they could be further dismantled than to rely on classical market research. This was understood by companies like Louis Vuitton a long time ago. Marc Jacobs, manager of the company’s creative division, commissioned artist Takashi Murakami to take the trademark of Louis Vuitton beyond its former frontiers. (Liebl, 2004 – my translation)

The interventionists interviewed know about these iconoclashes and take them in a far more relaxed manner than some critics do. One of the authors of the communication guerrilla handbook, for example, states that

[a]dvertisers can inspire themselves as well from our handbook. And, obviously, we’ve provided them with a lot of material. But what is so tragic about it? […] Capitalistic production is not something you can keep out of your life. It is one of the contradictions that you have to know how to live with. We argue that the difference between us, the culture jammers, and the advertisers is that we want to confuse meanings and destroy them, whereas advertisers still have to successfully sell something. The first is a tactical situation, the second a strategic. We want not to sell something but to shatter certainties. (Sonja, age 35)

A third criticism of culture jamming is that its techniques are not new. Many avant garde artists have been using similar techniques at least since the beginning of the 20th century. Many sign activists have responded to this criticism that they are not in fact creating anything genuinely new by insisting that all pictures – indeed, all individual utterances – are a melange of previously existing patterns coupled with the possibility of doing things differently. One of my interviewees put it this way:

Nothing’s new. Do you think these words are new? No, they all existed before I was born. I’m just putting them together in a new way.

the-line marketing, diffusion marketing or viral marketing,” states http://www2.acnielsen.com/pubs/2003_q2_ci_alternative.shtml (last accessed on November 4, 2005).
[...] Apart from history to make something new is preposterous. [...] I don’t try to take the ideas of Noam Chomsky or the sociologists. I try to impose my own world on it. I can make the world I want to. It’s not that I want to destroy other people or attack them. Or even become rich, which I’m not. I demand a little tiny space of blue, a bit of autonomy, a little space for my own imagination. I think everybody else should too. [...] I’m saying I don’t have to live in your world, Coca-Cola, Gap, or anything. I can take your bottle and make it into something else. That’s agency! I can take something, move it, and put it into life. I can still have my way. (Interview with CJ, 2004)

Here mimesis is not just about the production of the “same” but a mechanism for producing difference and transformation: “The ability to mime, and mime well, in other words, is the capacity to Other” (Mitchell, 2005b, citing Taussig). And this capacity is important in working with images against images, instead of working against images per se.

Navigating between visual orders

The majority of the interventionists interviewed work somewhere in the “image economy” that they themselves use as media for criticism. Most who were interviewed were very explicit about these tensions, one even welcoming an interview with his “conflicting two selves.” He had a day job with a widely circulated commercial magazine, filled with advertising and therefore possible traps.

Your own image is interesting as well. You have to work on your image, the way you present yourself, that’s obviously very different from what I’m actually like. This means that I don’t have too many friends there, well, ’cause it’s a job. You present yourself like a product. You just sell yourself as well as you can. Because somehow you have to pay your rent, you have to get bread and things like that. And the labor market is extremely competitive. (Jean, age 27)

Whereas the combination of a countercultural rebel bringing disorder to visual orders with a paid job in the “image factory” might seem odd at first blush, the interviewees underscore that it actually has many benefits for them. Working “inside” the image
factory helps those interviewed to understand better the mechanisms of how specific stories are circulated, and why others are not. Paying close attention to the reasons given by editors for specific stories makes it easier to argue with the new language learned and to serve as middlemen for countercultural stories in these media. Jean, involved in countercultural image acts but working for a mainstream fashion and trend magazine, provides a good example of trying to live with these tensions.

With the first issue of *XY* [a widely circulated trend-magazine], I noticed that if the pictures are right, you can run the story, the topic. The pictorial language is in part more important. And since the photo staff is cut off from the text staff, you have many situations that you shouldn’t have, where people look only at the pictures without looking at the text and decide to run a story. But for a magazine like *XY*, the pictures are often more important than text. (Jean)

This does not, however, mean that it’s straightforward to run these counter-stories. The interviewees have to negotiate between acting in different communities of practice, with those who resist the image factory, often criticizing all kinds of image use, and with those who work inside it. Jean continues as follows:

So when I decide to try to run a counter-story I try to find cool images in order to convince the others to do this article. That’s kind of wicked. For example, here they were quite courageous to run this story I wrote about adbusting. First there was a lot of censoring, and they were quite afraid of publishing the article. Foremost because of their advertisers, clearly. For example, anything that was against McDonald’s had to be removed, because they’re such an important client. They censored the article: the pictures were censored and partially they sent me my text back with the pointer “Do you want to lose your job or what?”

Since many of the visual interventionists interviewed design their critiques to be seen by many people in order to “wake them up,” especially those who do not share similar scenes or communities of practice, having access to mass media is considered to be a special asset. In Jean’s case,

I’ve always been annoyed by talk about rebel art and the like: you’re always in youth centers, you’re always in political institutions, and they always say, “Yeah, great, we totally agree.” You don’t reach
anyone else. You only reach the same scene, and I do think that you achieve very little with it. And I think when you actually get out of these scenes and reach an audience that reads XY, you actually achieve much more than sitting in squatted houses or left-wing cafés.

These examples, and many others that could be given, also show that countercultural activities and mass-media creation are actually more connected than is often thought. Thomas Frank came to a similar conclusion in his study of the use of 1960s U.S. counterculture in advertising and marketing: “Apart from certain obvious exceptions at either end of the spectrum of commodification […] it was and remains difficult to distinguish precisely between authentic counterculture and fake” (Frank, 1997: 8).

Whereas Frank focuses his analysis mainly on advertisements and marketing literature, it seems important to stress that some transgressive image activists actually find work inside the image factory, precisely because they tend to innovate and find new ways of thinking, helping to create attention, interest, desire, and action, as the AIDA marketing formula suggests. The stories of the self told in the interviews do not give coherent pictures of one identity but show instead situational identities, of which some are more important than others.

This should be seen not as a one-sided victory of post-Fordist capitalism but, rather, as stressing that all actions are negotiated within the constraints of intersecting situations and gazes. Visual orders and their contestation are not straightforward actions but intertwine heavily. Those advertisers spoken with usually knew very well about various ways of disordering the visual and had purchased many of the handbooks first intended for countercultural activities but then used the handbooks in novel ways themselves. As shown above, the interventionists interviewed had come across this phenomenon as well.

Explanations for one’s actions

A frequent way of characterizing oneself is to focus on the urge to do something, being driven, feeling discomfort, and being afflicted. The outside world or parts of it are in a false order, and visual interventions are a way of ordering them anew. They are acts that overturn the prevailing agent/patient relations of specific situations.
For me there was always this urge. You have to do it somehow, but I don’t want to say that I want to make the world a better place, like Michael Jackson said, you know. The best way to describe it is to say that you are driven, you have to do it. […] I’m definitely a very ambitious guy. I’ve always been kind of a fighter. There are, for example, many things I don’t really know too much about but still I can try. (Jean)

Besides being driven, many described themselves as courageous, but as well as workaholics, as people who work hard.

For others, questioning prevailing orders and being on a search were ways of describing oneself. Whereas some maintained that they want to understand what the human is about, and to question given answers and arrive at answers in their own ways, others searched by letting themselves “flow.”

Although those who were interviewed strongly questioned the cultural and conventional forms that surround them, disordering existing orders and thus creating “places of their own” and leaving traces for others to see, only one of those interviewed considered himself religious, although he denied that his religiosity was “real” religion. He is Tibetan Buddhist and is especially fond of Buddhist teachings in which the teachers don’t take themselves too seriously but make fun of themselves as well as of the pupils. For him, having fun and making fun is a way of questioning perceived orders, and also of breaking down supposed boundaries between situational ideas of good and bad, giving himself the freedom to consider first whether something is good or bad and in what sense.

Having fun is an important motif especially in the kinds of interventions that all of those interviewed engaged in. The austere atmosphere in many political actions, combined with the felt seriousness of the topics, seemed for many interviewees not to represent the kind of practice they longed for.

What I’ve always been bothered about in the left scene is that they don’t have a sense of humor. […] I think like a friend who keeps saying that a revolution without dancing is not mine. (Jean)

We have a lot of pleasure with specific actions, and that’s important for us. Without that, it wouldn’t be that much fun. (Sonja)
I only want to do things that are enjoyable, but those extremely intensively. (Peter, age 34)

The urge to do things, reflect on one’s own life, and do enjoyable things culminates for some of the interviewees in the idea of living for the here and now, without too much interest in one's own future.

I'm not the type of person who thinks too much about the future. I want to live now, and I want to be happy now, and I want to do the kinds of things I want to do now, and not later if things should go well. Who knows what later is? (Doris, age 26)

If I’d die now, I’d be content. After all, the kinds of things I’ve been able to do, that would be okay. I’m not afraid of it, and I think it’s kind of important as well. Earlier I always thought that I have to achieve a lot in my life, that I have to work a lot. […] Currently I instead think that I have to feel comfortable now and I have to be happy now, and if I can say that, then I’m not afraid to die. (Martin, age 26)

For some, interventionists techniques are a way to connect to other people and do interesting or “crazy” things alongside them. The techniques themselves then become boundary objects, connecting bodies performing interventions with other bodies and thus creating something new out of them.

Some again stress that visual interventions are the correct form of arguing in a political field focusing ever more on creating images and symbols and on using methods of advertising in order to construct a public sphere. The articulation of a visual critique is here the result of a political analysis calling explicitly for work that uses images against images.

There’s a tendency in the economy to shift in the direction of immaterial work, into communication work, which is called information work, informatization, all of these catchwords. And this has led to a situation in which, in specific parts of the economy, images and brands have become central for creating value. And in that moment, when we had understood that this shift actually is occurring, we started a discussion of whether communication guerrilla would be the form of action that argues on the same level. Which is capable of defying the arguments constructed and discusses actually with
advertisers and marketers, by their means. And not seeing this as being problematic but taking it rather for granted, because it’s about images, about the orchestration of images, about providing attitudes towards life via images. And by doing this having an articulatory instrument for critique on a contemporary level, on the level of capitalist relations of production.

And we do claim that communication guerrilla action provides this, because we have an instrument, a formula for action, on different levels, that can actually answer [to the claims of the image factory]. Or that at least is able and armed to argue on a contemporary level.

All interviewees, with their varying reasons for actually carrying out visual interventions and for acting with images, share in common a practical questioning of the dominant forms of living everyday life, although their specific questions and ways of addressing them might differ from one person to the next.

**Techniques and mediations**

*Ideas, concepts, artifacts, and techniques*

To gain a proper understanding of culture jamming not only as criticizing elements of post-industrial society and its ways of working but also as a continuation of certain modes of thought, ways of working with physical materials, and ways in which people assemble with specific artifacts, of interest is a focus on the agencies of ideas, the concepts used, artifacts constructed, and techniques applied by sign activists. This opens new horizons for understanding how images and communities relate to each other.

The purpose of this analytical distinction is not to dissolve the complex interplay between these categories and human agents into strictly separable categories but, instead, to stress the agency of each of these modes in forming the way we perceive culture jamming, a creative form of cultural resistance.

1) The idea of a world, as, for example, Lasn proposes, in which visuality is spectacular and obscures one from seeing the real can be found in many of the writings clustered under the synopticon. In the history of ideas, Plato’s allegory of the cave, described in his *Politeia*, is of special importance. In trying to find out about truth, Plato conceptualizes the phenomenally perceivable world as a shadow, which is created by the
light of truth, similarly obstructing a look at truth. The one who wants to know has to overcome the “shadows of images,” as well as the “reflections […] in the water,” in order to bring about “ascent […] of the soul into the intellectual world” (Plato, 1991) and get to know the idea of good. Here the image (the visible world) has agency in obscuring the recipient’s vision from the prototype (the idea of good in the realm of knowledge), which again is considered to be much more powerful than the image itself.

2) The concepts used attract specific communities of practice, which enact special discourse formations that require knowledge of left-wing critiques of society. Using “culture jamming,” “rebel art,” “tactical media,” or “communication guerrilla” approaches at this conjunction creates and strengthens the cultural identity of being politically aware. The concepts become symbols that extend situational activities over longer periods of time by giving the activity “noun-like permanence” (Collins, 2004).

At the same time, the methods introduced alongside these concepts teach activists new ways of using media for communicational purposes. The usual tools of communication, such as posters, flyers, speeches, demonstrations, manifestos, press releases, and lobbying, to attract attention are broadened to include other means. Besides spreading dissonant information content to the mass media, many culture jammers want to try to support the emancipation of individuals toward a DIY culture. Although the methods discussed here do not include critique through enlightenment, the effects of the method and the possibility of a proper contextualization rely heavily on information work. This does not have to be, and indeed for the most part it is not, directed against new technological developments. Examples of previously designated routes that can help people create their own mediated orders of the world include Indymedia, with the slogan “Don’t hate the media, be the media”; Creative Commons, encouraging people to restrict copyright so as to allow various kinds of fair use for the products they have produced; and Wikipedia, where the content is actually created by its users. These platforms do not function by means of exclusive copyrights that distinguish between producers and consumers; they enable users to create their own meanings. Interestingly, the advertising industry is now launching campaigns in which advertisers are bringing customers into the advertisements aimed at them.

42 This is what many traditional political groups are relying on – for example, ATTAC.
43 On the colonialist implications of Wikipedia, see Vadén (2007).
44 This is referred to as customer-generated advertising. A good example can be found on the Converse Web site, where customers are asked to create short films featuring their associations with the brand and
3) The artifacts constructed take on a life of their own, which brings them into cultural circulation, as in the relationship between art and activism. James Clifford’s (1998: 224) art–culture system (see Figure 32), which he uses to reflect upon the production of authenticity in Western post-industrial countries, seems to me to provide a useful vantage point for exploring the situational frames that affect the lives of individual artifacts between the poles commonly understood as art and culture. Depending on the phase in the life cycle of an artifact, it is still assembled with the original producers and used thus to utter critique or has changed its use and appears in the hands of the same or other people as “not-culture,” “not-art,” “culture,” or “art,” before it, at some point, vanishes. Obviously, not all artifacts live through all phases, but they do have in common the entrance into a field of possible futures. Not only art and culture are used to construct authenticity in Western post-industrial countries; other conceptual and pictorial chains that are tied to the logic of the Enlightenment have to be taken into account. Concepts such as “freedom,” “welfare,” “rights,” “sovereignty,” “representation,” and the master term “democracy” are frequently used in creating a meta-narration of our own lives. The diasporic use of these concepts has disconnected them at times from their original Euro-American narrational logic (cf. Appadurai, 1996). Constantly emerging interpretations extend their meaning, producing semantic shifts and thereby new clusters of association.

4) The techniques applied by sign activists are used by a wide range of actors, with very different habituses and patterns of everyday action, as I have attempted to demonstrate through the lens of guerrilla marketing and cultural hacking. The Syrian company New Boy, which created a doll (“Fulla”) for the Muslim market, contests as well the clusters of association that the producers of Barbie have tried to affiliate with their own dolls (see Figure 33). These kinds of reinterpretations share similarities with the Barbie Liberation Organization actions discussed above in broadening the range of images behind Barbie or dolls in general. Similar methods are applied in certain right-wing marketing strategies as well as in the ways that religious organizations approach their target groups.

Figure 32. Clifford's “art–culture system.”

Figure 33. A poster advertising Fulla in Damascus. Fulla is one of the many appropriations of cultural products that are localized as slightly different.
From the viewpoint of those engaging in culture jamming, it obviously empowers individuals to produce their own mediated meanings and thus to question given orders of the world. It is a reaction to a shift in societal work, toward a focus – especially in Europe and the U.S. – ever more on a symbolic dimension, as seen in design, research, and marketing, while the actual goods are often produced in “Third World” countries for their cheaper labor and less strict work regulations. As one interviewee put it, “If it is true that value creation focuses currently on communication and symbol analysis, if it is true that companies actually sell products and commodities ever less and instead images, then it is no wonder that political actionism engages on this level.”

The techniques of culture jamming are not restricted to a few individuals fluent in a post-Fordist critique of contemporary capitalism. They are and can be applied by a wide variety of actors, often by those fluent in visual communication. The rise and interest in culture jamming goes hand in hand with new picture production techniques and low-cost means of distribution and publishing, giving also ordinary people access to fields that used to be professionally closed. These kinds of methods open a space for micro-narrations, which, depending on the context, are beneficial to certain interests, often at the expense of others. For instance, more and more news is now produced with material provided by amateurs. Digital cameras (especially camera-phones) have become almost constant companions of individuals moving about in space. People have started to “picture back,” working as citizen journalists, publishing what they see via mass media. Amateur cell-phone photographers and videographers made their mark on the occasion of the December 2004 Asian tsunami, and by the time of the London bombings in July 2005, some of the most circulated pictures were taken by amateurs on the spot. Even more information content is produced by citizen-paparazzi as they unveil the secret lives of celebrities. Once published, these pictures often take on their own individual uncontrollable lives. To quote Arjun Appadurai,

we can see that electronic mass mediation and transnational mobilization have broken the monopoly of autonomous nation-states over the project of modernization. […] It is the widespread appearance of various kinds of diasporic public spheres that constitute one special diacritic of the global modern. (Appadurai, 1996: 10–11)

For the practice of culture jamming, the “global modern” means also that it is difficult to keep the idea behind the practice, the concepts used, the artifacts constructed, and the
techniques applied within a closed community of practice that shares very clear ideas about when, how, and why these techniques are applied.

The artifacts created in culture jamming are instead boundary objects, inhabiting several intersecting communities of practice and “satisfying the informational requirements of each of them” (Star and Griesemer, 1989: 393). In a group of hunters and gatherers, without much outside contact, the status of culture jamming would be very different than it is in a “global modern,” where ideas, bodies, money, artifacts, and techniques flow translocally. Culture jamming is in this sense a contemporary example of a translocally shared cultural technique and practice, which is mediated largely via images in corpore and in effigy. Examples of culture jamming techniques can be found in Berlin, Helsinki, New York, and further afield. One interviewee spoke of how his knowledge of culture jamming resulted in invitations to perhaps surprising places such as Dubai and Bogotá to discuss and teach the different kinds of methods available.

What makes culture jamming especially interesting for our discussion of agencies of digitally networked cameras is that the examples given show the importance of a flow of mediations if one is to be able to “do” culture jamming. The practice itself can be learned in various ways: from books, photographs, videos on YouTube, workshops at festivals, or people telling about it. More complex forms of culture jams are often well documented by those participating, and special care is devoted to achieving the “right image,” both intervening in an image-sensitive context (such as Lufthansa in the deportation class example) and creating images that are distributed for free in mass media. In quite a few cases, the constraints of electronically mediated communication (e-mail, brief interviews, and Web pages) are explicitly exploited for giving an appearance of a specific kind of communication, which is later subverted.

In examples of culture jamming, cameras are often used for documenting the actions and distributing pictures from them for other interested parties to see, be they mass media distributing the stories to local and global audiences or smaller communities sharing their insights through blogs, social networking sites, or other Web sites. The examples show that the use of cameras is always tied to broader acts and that the camera is often not the sole medium for creating and transmitting images.
Concluding remarks

The discussion of the deportation class and Nikeground campaigns has shown that the methods of culture jamming provide an opportunity for a highly sophisticated operation within the world of signs and images, as argued by some of the interventionists interviewed. These kinds of actions do not remain in hyper-reality; they have real effects. Known forms of argumentation give way to others when actors start to concentrate on the image. Arguing within the realm of synoptic images created originally for specific purposes helps in producing novel chains of association with established products and processes, such as to Mattel's Barbie, Lufthansa's flights, and Nike's collaborations in various events. The techniques employed are very similar to the original communication acts of the companies discussed, but they intentionally challenge particular ways of presenting face, and thereby the moral foundations of the interactions suggested. By reworking mediated communication, the activists suggest other kinds of moral attributes and so other forms of maintaining face. These critical uses of image technology, cameras, and editing software argue on par with synoptic images and do not rely on another medium for criticizing, such as mainly spoken language or written books. The synoptic gaze is questioned within its own mediality.

A wide variety of other examples could be given, and methods of culture jamming are used today by diverse actors. However, it has to be noted that still culture jammers in Europe and the U.S., as well as advertisers in Finland and Syria, for example, are almost all better educated and technically equipped than other people living around them. Access to these kinds of communicational tools still requires considerable socialization.

Nonetheless, using logos, slogans, and accompanying pictures to further one's cause has by now become a taken-for-granted method for a wide range of societal actors. The argumentational form, I maintain, serves as a visiotype, connoting professionalism, seriousness, reliability, quality, and keeping up with the times. Just as a suit is an important garment for men on formal occasions, so the methods used in advertising to promote sales have become perceived as a necessity for almost all social groups. The means of communication used to attract attention have an effect also on our forms of social organization, as well as the felt need to control specific cultural techniques.
Therefore, using methods of culture jamming successfully for criticism is not just a simple act. It changes the ways in which we connect to mediations and thus connect with our surroundings. For example, Figure 34 shows a petition handed by seven North American tribes to the U.S. Congress in order to guarantee their rights to fish in the four lakes shown in the lower left. The animals depicted represent the seven tribes, with the crane in front submitting the petition on behalf of all of them (the crane being the heraldic animal of the Oshcabawis). The link from each animal’s eyes to the eyes of the crane, as well as the link from each animal’s heart to the crane’s heart, suggests that the tribes have a common agenda and share a common concern. One of the lines leading from the crane’s eyes extends to the lakes and so communicates the shared desire for a right to fish, and a second line from the crane’s eyes reaches the upper right corner of the petition, toward the invisible Congress from which the tribes hope for fishing rights (Doblhofer, 2003: 25–26). Today, the tribes articulate their petitions by different means, much more on par with hegemonic forms of mediation. They have learned to deal with novel conflict mechanisms and are acquainted with discursive practices in court as well as in mass media. Also other kinds of institutions and groups formerly working with just one person responsible for public relations now have to consider consulting professionals in these fields: advertising agencies or political activists known for their campaigns. Thus the methods propagated via the concept of culture jamming do not transport previously existing political ideas but profoundly transform them and change the way we understand political action. The mediations matter.
Chapter 4

The digitally networked “cam era”

So how do we use digitally networked cameras at a time when they are ever more available, and how do these cameras mediate our actions?

My perspective, focusing on both symbolization processes and material mediations, theoretically grounded in Belting’s anthropology of the image, and drawing from social scientific practice theories discussing the agencies of things, shows that an approach linking images and media to the bodies using them is a promising path for explaining why pictorial media are used in the first place and why their use remains within particular pictorial practices in specific spatiotemporal settings that may become translocal.

In contrast to the common view that material artifacts are uncontroversial means to an end, transporting individual and social action without affecting it, the empirical findings suggest that cameras modify and translate action in specific ways. The discussion thus far from this theoretical perspective suggests that in non-professional camera use the action of bodies is distributed over to material artifacts, which modify, translate, expand, and delegate action. The material artifacts work on humans, in turn, via their affordances, which are specific to each thing used as medium. Both bodies and artifacts are used as media for actions. A body and the technical artifacts used form an assemblage for specific techniques, which would not be possible without the body using the artifacts or without the artifacts using the body. In this sense, action is distributed over a larger network that contains various artifacts.

As suggested in discussion of “desires for techniques,” digitally networked cameras and the “ICT revolution” they are part of converge specific techniques of the body that usually found first artifactual forms centuries ago. The desire to represent the seen, for example, has been met with the aid of speech, drawings, mirrors, and other kinds of human artifacts, and the desire to transmit the seen in space has almost as long a history. For convergence of these desires into digital camera technologies, they have been
automated and translated into binary format. Quite often the automation of these processes pre-dates the “ICT revolution,” but within the digital realm they gain specific form.

Some critical media theorists focusing on the visual suggest two overwhelming visual orders, thus orienting perceptions and relations towards images and the visual in general. Both of these, the synopticon and panopticon, are highly asymmetrical visual orders, but, as suggested with my approach focusing on pictorial practices and techniques of the body, these are only two specific forms of ordering of the visual, which still can be found in many forms, even in the empirical material collected on some photo-sharing and social networking sites. They do not, however, make up the whole visual field. Bodies use images, both in corpore and in effigy, for various purposes, as shown in the empirical case studies. Picture uses are manifold, and some pictorial practices explicitly confront asymmetrical visual orders, as shown with interventionist techniques.

In the “cam era,” ever more people have started to use cameras for various purposes, and cameras themselves are embedded in ever more types of devices. Whereas earlier pictorial media were handled by the few, today ever more have access to cameras, being able to multiply the representational spheres we live in, and thus influence the kinds of visual orders we live in.

The cameras themselves, their availability, and their networked character provide for many and diverse uses. The findings in the empirical case studies show the importance of traditional pictorial practices such as of the “Kodak culture” but also the emergence of gradual changes in the ways cameras are used. Examples of ways in which networked cameras are used were described in detail in the case studies, providing answers to the first main research question, of how we use cameras as they grow ever more available.

In the following discussion, I will focus more closely on the second question, that of how these cameras mediate our actions. The question is of special importance in trying to understand the roles networked cameras play in mediating our social interactions. From the theoretical perspective applied, focusing on the interconnections among images, bodies, and media (especially the ways in which our bodies create and use artifacts as media for actions), I maintain that medium-specificity, with the particular
affordances of networked cameras used, has an impact on the ways in which they are used. (Cf. Lanzara, 2009)

These affordances do not have autonomous agency in the use of cameras but provide possibilities to which bodies can connect in particular ways. Gibson (1988), who coined the term “affordance,” made it clear at the outset that these are always relational to the bodies interacting with specific things affording some kinds of uses, not absolute. Additionally, he highlighted the manifold affordances that things can have. Highly networked, partially automated camera systems indeed provide very many of them.

The notion of affordance is in my understanding useful in pointing at the specific characteristics of things that enable particular uses while constraining others. A camera can be used as medium for several actions, from taking photos to throwing at a target far away, but it cannot be used, to my knowledge, as, for example, a mechanism for actually flying to the moon. The many ways in which things afford uses relationally to the body are one reason it makes little sense to even try to make a general list of the affordance of networked cameras.

My use of “affordance” in this reflects that applied by Rose (2010), who discusses affordances as something that have to be activated in one way or another. These affordances both enable and constraint the ways in which specific things can be used as media for human practices. The activation of affordances is not causal, but culturally informed, by the kinds of images and associations that we have for doing. The empirical case studies provide examples of the ways in which these affordances are activated, and other case studies would show similar, or at times also very different kinds of results.

In this view of affordances, entailing a need for activation of affordances, I am not interested in the question posed in related research (e.g., Bloomfield, Latham, and Vurdubakis, 2010) discussing which comes first: the affordances of things or the social construction of things as specific kinds of things. Rather, with Belting’s triad of images, bodies, and media as backdrop, the *interrelations* between material mediations and image uses are of special interest.

The notion of affordance as used in this study is helpful in pointing towards characteristics of networked camera use that are activated as part of practices. The main benefit of this use is that it helps to turn our attention toward the ways in which particular “‘objects’ merge with ‘people’ by virtue of the existence of social relations between persons and things, and persons and persons via things” (Gell, 1998: 12).
The question of affordances, and their particular activation in practices, is in the perspective I apply an empirical question. Affordances, by enabling and constraining specific uses, play their part in directing human action. The empirical case studies presented have explicitly focused on bridging the connection between symbolization processes and material mediations, showing how they merge in “doing.”

Since networked cameras are constructed by people and put to use by people, a focus on affordances and mediations aids in extending social scientific understanding of the ways in which these things are constructed, and how particular constructions of networked cameras matter. Often, social scientific studies of, for example, photo use focus on the social construction of various conventions in the ways in which photos are used but tend to neglect the importance of the ways in which the devices themselves are constructed. In networked camera use, with ever more cameras being used in ever more situations and the cameras being interconnected with various software, this construction work gains added significance. It matters whether or not, to take an extreme example, all surveillance camera footage recorded in a city is automatically distributed to a publicly accessible Web site where it can later be searched and modified.

The empirical findings and related development in networked camera technology suggest specific affordances that are of particular importance in networked camera use.

Below, I discuss three main suggestions. 1) First, the image in effigy created with a camera itself is of special importance as one considers the use of networked cameras. The bodies using cameras do so in order to translate images in corpore into images in effigy, and this translation work has specific effects. The camera device, used for creating these images in effigy, affords a specific kind of relation that many of those interviewed enter when distributing selves into photographs. Indexicality as an affordance is activated as part of these pictorial practices.

2) The networked connectivity as an affordance provides for uses of cameras that were not possible with a similar scale and scope, for example, a hundred years ago. The empirical case studies show various example cases in which this connectivity is of special importance in living out translocal pictorial practices. Networked connectivity is a good example of providing for visual constructions of the social field (Mitchell, 2002) that enable everyday life in surmodernity. Since things strike back, this connectivity is not realized as smoothly as some suggest. This is why particular attention, discussed below, is placed on both the need for “infrawork” (discussed below) and variety in automation.
3) An important feature of networked camera use is the possibility of convergence of various techniques in a single network. The brief history of converged techniques provided above supplies examples of how this has been done historically. Here I will additionally specifically focus on the variety in current uses.
The camera device

Indexicality in images in effigy

The empirical cases presented suggest a wide range of ways of distributing action with the aid of networked cameras. Cameras transform action not in a stimulus–response manner but as part of both symbolization processes and material mediations, as suggested in Belting’s outline for an anthropology of the image. Belting’s approach to this discussion is useful in pointing to the interconnections between images, bodies, and media, and thus between people and the artifacts at their disposal.

From this angle, a human body has to interact with an image available from a specific medium in order to see it. The medium affords the image, and it has to be transmitted via a look, which is used to order the visible. Just as the way in which a person looks at an image is of importance, so are the ways in which various media are able to make images visible.

From this perspective, our body is the first location of images, and a necessary ingredient in any consideration of image use (Belting, 2001). In face-to-face interaction, social conventions structure our interactions and we are seldom allowed to explore other humans with all of our senses. We can do so only with those close to us, often behind closed doors.

The techniques for creating images in effigy, in this study focusing on networked cameras for doing so, allow for apprehending images differently, surpassing specific social conventions that we deal with in face-to-face interaction. The image in effigy affords uses that are difficult to maintain otherwise. Photographs, for example, can be studied as long and meticulously as we want, but they have to be animated with the aid of our look, and so images in effigy become part of the images we carry in our bodies. There are differences between how we look at, for example, people’s makeup in face-to-face interaction and how we look at it while alone and browsing through photos from a photo-sharing site. Material artifacts are not just means to an end; also, they afford specific uses.

The way we look at photographs of people around us thus differs from the ways we look at those depicted when confronted directly with them. The image in effigy translates our look into one we might not have without the medium used – although this
translation is often not noticed. Photographs can be studied at length and animated in our minds, and they do not need to be responded to in a similar way to images *in corpore* in face-to-face interaction. The mediation of images *in corpore* to images in effigy affords uses that differ from the affordances and social conventions in face-to-face interaction. When looking at photographs, we don’t have to nod, take turns in conversation, or look at the depicted person in the eye while she is talking.

All of the case studies suggest that we invest special agency in images in effigy. For example, the last case study shows how advertisers create advertising images as a sort of trap that is believed “to transform the way people think, feel and ultimately behave.” A picture depicting the face of a smiling woman, with a slogan and an image of a product at the side, is believed to assist in creating consuming bodies that act in accordance with ideas suggested via synoptic settings. Many interventionists again attempt to counter the images created in the image factories by slightly modifying the original pictures, or by appearing themselves as images *in corpore* to be depicted in mass media in effigy. Both actors invest specific agency in images in effigy.

Those studied have shown a special relation to image use in general and with camera pictures in particular. In camera use, as the empirical examples show, the indexical relation between the depicted and the depictions is given special emphasis, and indexicality as an affordance of photographs is of importance in the use of photos. To cite Rose (2010: 506) once again, “As an affordance, it is one of a photograph’s inherent qualities; but it is only realized and significant as it is ‘activated’, as it were, by particular practices.”

Whereas in the first case study most of the pictures within the “Kodak culture” were shared with known peers and pictorial communication remained restrained, some who were interviewed had started to share their snapshot photographs publicly, an issue that has been discussed heatedly in mass media and academic papers. In the discussion here focusing on the reasons given for sharing or declining to share photos, the indexical relation between photographs and those depicted has been given special importance, in line with findings on the “Kodak culture.”

Here the indexical relation between depicted and depiction affords the distribution of one’s self into the pictures, which are treated with special care. Interview findings such as not sharing pictures of people important to oneself publicly out of fear that third parties will use them for purposes deemed immoral (such as pedophiles using pictures of
one’s child bathing for sexual pleasure), or not wanting pictures of oneself shared publicly, are examples of distributing specific agency to the photographs taken. The pictures themselves are seen as containing in one way or another one’s self or someone else’s self.

Interestingly, some people interviewed had explicitly started to take a proactive stance to living in a digitally networked “camera,” preparing themselves and people dear to them for being ever more depicted in effigy. One interviewee had even started mentally negating the indexical relation between photographs and those depicted, and thereby the usual relations between an embodied self and its distribution into photographs. By claiming that photographs shared publicly on photo-sharing sites are not an extension of herself, the interviewee created a strategy that questions a powerful discourse. The success of this strategy, and its wider acceptance, remains a future research question.

In networked camera use, images in effigy are digital photographs. These converge various techniques for creating images, such as the use of cameras, drawing and collaging, thus somewhat confounding the notion of indexicality as an affordance. Especially advertising imagery but increasingly also other kinds of pictures, as exemplified by interventionist techniques, combine camera pictures and postproduction, such as editing with the aid of image editing software. Here camera pictures assemble various techniques for creating images in effigy, such as photography and digital painting, and in many cases it is difficult to say which parts of an image remain photographed and which not. In these cases, the status of photography as bearing an indexical trace, as often conceived within the “film era,” is questioned and becomes at times unclear (cf. von Amelunxen et al., 1996; Heidenreich, 2005; Elo, 2005; Osterman, 2007; Gronberg and Magnusson, 2010).

This latter, rather technical question was still of little importance to most of those interviewed. Indexicality as an affordance of photographs is in this study still “activated” as part of particular practices in which digital photos are used. As an interesting contrast, the interventionists studied had started to experiment with the various mediations our everyday communication takes, playing both with social conventions, as well as material mediations.
**Mutual focus of attention**

The camera device itself is used to direct mutual focus of attention. The camera device is used to focus our own attention during picturing but, as well, to direct the attention of others to being depicted. The device is used as well as a means of social exploration and aesthetic experience that is often not tolerated without it. Special forms of hugging, posing, and fun-making are not considered appropriate if a camera is not around. These provide examples of the ways in which affordances and social conventions are entangled, making it difficult to draw any clear-cut differences. Images, bodies, and media are intertwined.

In the first case study presented, focusing on Finnish mothers’ and their pictorial networks’ use of networked cameras, there is strong emphasis on the decades-old pictorial practice that Chalfen called the “Kodak culture.” Here picture-taking itself, carrying a camera to special occasions, taking it out in order to shoot photos of those dear to one, and posing for the eye equipped with a camera, is deemed to be of special importance. Images *in corpore*, turning the bodies into images to be depicted, are of remarkable significance. Here the ways of looking at each other in face-to-face interaction accentuate specific kinds of looks and these are turned, with the aid of a camera device, into symbols of group membership. This ritualized interaction “is a mechanism of mutually focused emotion and attention producing a momentarily shared reality, which thereby generates solidarity and symbols of group membership,” as Collins (2004: 7) reminds us.

The camera mediates specific kinds of looks and posing bodies turned into images, which would not make sense for those interviewed without the device used. The relative unimportance of the technical quality of the photos taken coupled with the increasing sense that the photos taken are seldom looked at even though interviewees at the same time took up to 20,000 photos a year and all interviewees suggested taking many more pictures in the future suggests strongly that snapshot photography was, for most interviewees, of special importance during the act of taking the pictures and the act of posing for them. Here the camera device, and snapshot photography as a culturally accepted activity, allows bodies to come close to each other and those depicted to hug, strike funny poses, pose cheek to cheek, and feel connected in ways not exhibited in many other situations in everyday life. The camera here affords togetherness, belonging,
and strengthening of social ties. The camera device acts as a cue making social proximity acceptable.

Some of those interviewed did explore the possibilities of networked cameras and use them in ways similar to those suggested in related studies of mobile camera-phones’ use, for example. Here the possibility of capturing what one just sees – for example, one’s child on a sled in wintertime – and transmitting the seen almost immediately to significant others in one’s pictorial network, such as one’s parents, is used in order to bridge space in time. Pictorial media, with the option of easy transmission, afford people being at different places at the same time yet still communicating meaningfully. In these kinds of cases, the mediating characteristics of networked cameras become more important, as do the infrastructural constraints. Both the sender and receiver of the seen via networked cameras need a device capable of sending and receiving images, a screen that visualizes that which is sent, and the money needed to pay for these services.

In all of these cases, the camera affords mutual focus of attention. Simply by carrying a camera and pointing it at others at a social gathering, the people studied create a specific interactional moment, which is of importance. The camera as a pictorial medium is used to create and transmit images that are deemed significant. The camera is used here for creating “solidarity and symbols of group membership.”

**Designed intentionality**

The designed intentionality inscribed in material artifacts is of special importance when one is trying to understand the ways in which digitally networked cameras mediate our actions. Digitally networked cameras, affording various uses, are designed with specific intentions in mind. With the assistance of design, specific uses by specific people can be encouraged. Having, for example, mobile camera-phone software in the Finnish language and on a device with very small buttons limits the number of people who are able to use the software as intended. Because of these material inscriptions, designed intentions are often decipherable even if the original creators are gone. (Cf. Gell, 1999)

With functionally well-designed products, the artifact itself affords its designed use. In order to do so, the artifact has to fit existing techniques of the body or modify them explicitly. This design for “intuitive” material activity rests fundamentally on inscribing material instructions in the artifact itself. In this process, the artifact itself plays a part in guiding and directing material interaction. If the user experience is “seamless” (i.e., the
techniques of the body fit the affordances of the artifact), the artifact’s use is as natural and easy as is the use of one’s fingers. And although it might seem that we can somehow “naturally” use our fingers, it is an acquired skill that we start to learn almost from the day we are born. The precise finger coordination needed, for example, to play a piece by Debussy or Rachmaninoff on the piano needs many years of training, but once the correct techniques of the body have been acquired, it seems as if the player’s body and the artifact played merge into an assemblage that is greater than its parts. So designed intentionality, inscribed in an artifact, and techniques of the body “accepting” the designed affordance merge into a coherent whole, a repeatable distributed action.

In the following, I will focus first on variation between closed and open designs. Here I will look at rather closed designs as specific ways to intentionally limit with design solutions the use of specific networked camera systems. Then I will turn to rather open designs, that enable various different kinds of uses, as has been already shown in the beginning with the help of the camera obscura and its varied uses. Second, I will pay closer attention to the roles business models play in the decisions related to rather closed or open designs. Third, with a specific focus on material mediations, their capability to “strike back” against the grain of human intentions is underscored.

Relating the findings from the empirical case studies to other networked camera systems in actual use is of importance in generalizing from the empirical findings when trying to understand how cameras mediate our actions as they become ever more available and digitally networked. This is why in the following discussion I have chosen to draw both from empirical results presented, as well as to point toward other networked camera systems and their uses that are of importance in discussing our research topic: How are cameras used as they are ever more available, and how do they in part mediate our actions.

**Variation between closed and open designs**

**Closed designs.** When looking more closely at the various pieces of photo-related software available, we can see that they differ significantly in their openness in designed intentions. A digital camera in general can be used, and is, for a variety of purposes, such as depicting family members on festive occasions; showing things to buy; or serving as a “mirror” showing how one acted, for example, while rehearsing a play (see “Digital snaps and the Kodak culture”). An expensive digital microscope, in turn, is usually
designed for a very concrete task, wherein the benefits of acquiring said specific artifact should be clear for those investing in it.

In the empirical examples discussed, relatively open designs predominate in the cameras that were used, which is why I will discuss here as an example of relatively closed designs a specific networked camera system popular for non-professional use. Here a closed design is inscribed in the service itself, being part of the camera system that end-users interact with.

The Daily Mugshot service (DMS), serving as an example to be discussed closer, was created out of a single, narrowly defined idea, the wish to be able to make a video of oneself containing a picture taken each day. The video shows the progress of time and the small changes happening to us each day, which we often barely notice. Our yesterdays differ from our todays.

Keith, the designer and creator of the site explains,

The Daily Mugshot began when I came across a dude who took a picture of himself every day and turned it into a video. He had taken pictures of himself every day for years, and the video was amazing. I thought: I want to do that too!45

Instead of just making the same kind of video by, for example, arranging a special place for daily pictures in his home, uploading them to his computer, and using special software to work with the images and turn them into a video, Keith designed a technology that would help him to turn changes in his body, images in corpore, into moving images in effigy. The set of techniques needed without specially designed technology seemed too laborious. Keith continues:

Then I began thinking about what sort of system would make the entire process as easy as possible, and furthermore, what would be the most fun and easy way to show these videos to friends on the net.46

The designed intentions articulated by Keith include creating a system for making special kinds of videos, with a picture of oneself each day, having the entire process as smooth as possible. Besides, sharing these videos with friends on the Net should be easy and fun.

45 See http://www.dailymugshot.com/main/about (last accessed on September 7, 2010).
46 Ibid.
The Daily Mugshot service carries these instructions in the form of text and example videos, further clarifying the intended use of the service. Instead of creating a photo- or video-sharing service for a wide variety of material, the design of the service follows the desire for a technique to represent one's self in a constricted format that allows following the passage of time and sharing these representations for others to see.

The service enables intended uses but explicitly restricts other kinds of uses. On sign-up, an account is created, which can be adjusted via separate settings. For taking one's first picture, DMS has to be given the right to access the computer's webcam used for taking a picture, connecting DMS to the camera that the registered user is using. When making this connection for the first time, the service prompts setting of special anchor points intended to aid in positioning one’s head in the same manner in each picture in the days, weeks, and years to come (see Figure 35). Already these two features, the service gaining access to one’s webcam and the suggestion of setting “landmarks,” guide – with the aid of artifacts – the visual display of one’s body, seen later in the visual representations.

When following the intentions of the design, users will use a quite low-resolution Web camera attached to their computer and look face-forward into it. The visual form is similar to taking mug shots of criminals, hence the name of the service, “The Daily Mugshot.” The shot can be repeated until the person taking the picture is content with the image, and the picture, when saved, is automatically uploaded to an external server and shown on the DMS site as part of a video. Only one shot a day can be uploaded to the site, a further example of the design restricting the use of the service. Individual pictures can be seen and selected in a mosaic grid, and the video can be shared for others to see via popular social networking tools such as Twitter, Facebook, Myspace, or Hi5, or printed as individual pictures in a purchasable flipbook. If the user has decided to opt out of publishing the pictures for others, the site suggests to “be brave and go public.” The pictures are archived on the DMS server and cannot be downloaded within the service in any straightforward way. See Figure 36 for a figure on paths of images in DMS.
Figure 35. The Daily Mugshot service suggesting landmarks to be used when one takes daily pictures to be uploaded to the Web site.

Figure 36. The paths of images in the Daily Mugshot service. After the user signs up, the picture-taking process is repeated each day, including shooting, editing, and distribution. The light areas are suggested uses, and the darker areas show additional use possibilities within the service.
The description of the process of using DMS shows quite clearly the closed design to be found in the networked material artifact itself. DMS thus affords only very specific kinds of uses, and innovative use is much more difficult than, for example, with mobile camera-phones, which allow for varying uses, as explored in the case studies. With both clear instructions and designed intentions constraining the service’s use, it is not too surprising that in an empirical study focusing on users of DMS, most users appeared to use the service exactly as intended: taking almost daily forward-facing pictures of themselves, letting the service upload the pictures and show them publicly as an animated sequence (Beer, 2010).

Open designs. Open designs are not aimed at restricting the use of an artifact or a service to only a particular task, as in the DMS service. Instead they let users decide how to use them. Here the artifacts cannot bear very complex technical constraints and have to be open to modification. Whereas some open designs seem to come up in cases wherein technically interested people have found a novel technical solution but do not yet know what to do with it, in other cases the actual uses are not that important, say, for a mobile camera-phone manufacturer, or a telephone operator. The latter are interested in these devices being used in general rather than in specific uses. This is why cell-phone cameras serve as an interesting example of digitally networked cameras that are usually designed in a manner enabling third parties to create applications for them.

Since 1999, when mobile camera-phones were tested and later manufactured for consumer use, a wide variety of research papers focusing on empirical use cases have stressed the novel, interesting, and exciting uses of mobile camera-phones, which seemed almost causally to change what is worth taking pictures of, as, among others, Okabe and Ito (2003) suggested. Here the design of the mobile camera-phones seemed to afford important changes: the camera-phone can be carried with a person; it has data connections; and, perhaps most importantly, mobile camera-phone companies did not apply technical constraints to what can be depicted and what not. Whereas in the DMS case users are allowed to upload to the service only one picture a day, mobile camera-phones can be used as often as one pleases, or at least until the memory is full or the battery empty.

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47 I have encountered this attitude from several computer scientists, who after inventing a novel technical means are not that sure what to use the resulting artifact for and decide to conduct user studies in order to know what the artifact might be good for. With complex “open” devices such as mobile camera-phones, these studies often yield surprising findings.
Focusing on affordances of mobile camera-phones shows that they support a wide variety of uses, enhancing human capabilities. A line of research into mobile camera-phones shows empirically their traditional uses as successors of snapshot photography (e.g., Lehmuskallio, 2009b; Lehmuskallio and Sarvas, 2008; Sarvas and Frohlich, 2011; Rantavuo, 2008), and others have focused on documenting novel and different kinds of uses in comparison to traditional snapshot photography (e.g., Mäkelä et al., 2000; Koskinen, Kurvinen, and Lehtonen, 2002; Van House, 2006; Okabe and Ito, 2003; Matsuda, 2005; Okabe, 2004; Villi, 2010). The empirical examples discussed in this study provide material linked with both kinds of results.

Mobile camera-phones are used for assisting one’s memory (cf. Kindberg et al., 2005), when, for example, one is shopping for furniture and taking pictures of various models seen for assistance in a purchase decision or when one takes pictures of maps for later consultation when instructions in finding a specific location are needed. They are used for communicative purposes, in taking pictures of things that are difficult to verbalize, such as the appearance of one’s dog, a mechanical device, or what happened in kindergarten, or when one needs to do so as part of work processes, such as scanning flight tickets for the accounting department. They assist in seeing more than meets the eye, when, for example, used as mirrors or for taking pictures of other kinds of places that one’s eyes do not have direct access to. Some suggest that these latter, non-snapshot uses of digital cameras are “repurposive appropriation,” creative everyday acts in which users invent and adopt new uses (e.g., Salovaara, Helfenstein, and Oulasvirta, 2011). This “repurposive appropriation,” as used by the latter in studying creativity in camera use, makes sense when compared to snapshot photography and the “Kodak culture” but less so when one focuses on the mediations digital cameras are capable of. Digitally networked cameras converge and combine various desires for techniques in manifold ways.

An important part of mobile camera-phones is the camera obscura, which has been used as part of various professions, from astronomer and painter to philosopher, and showman. Over its long history, the techniques inbuilt in the camera obscura, addressing the desire to represent the seen, have been complemented with other techniques to form technologies, specific assemblages of techniques.

If already the technically relatively simple open design of the camera obscura afforded various uses over the centuries, it is no wonder that mobile camera-phones have
found a wide array of uses. Additionally, mobile camera-phone companies often let third parties program applications to run on their operating systems, thus actively encouraging picture services such as The Daily Mugshot to create artifacts that facilitate very specific tasks. Increasingly, mobile phone manufacturers encourage the creation of third party programs by providing an infrastructure helping to do so. Here software development kits, established online stores selling created applications, and development competitions are means to find varied uses for these devices.

The Daily Mugshot is only one of thousands of camera-based applications available for mobile camera-phones. Today ever more purpose-specific applications, of a myriad types, are developed by third parties, so users can use their camera-phones, for example, for barcode scanning, as a mirror, to augment movement in city spaces with contextual information, or for quick use as a point-and-shoot device for selling scoop photos directly to mass media.

Therefore, digitally networked cameras, from this perspective, should, as suggested, be understood as hybrid assemblages of techniques that can be recombined in various ways. The modularity of many digital devices allows embedding the camera in various activities, and snapshot photography is only one of these. Their actual uses for various purposes is heavily influenced by the closed or open designs employed.

**Business models**

The design of digitally networked cameras and accompanying software applications is heavily influenced by the business models of those providing these artifacts. Looking at the history of consumer photography shows that ICT-mediated and analogue/film consumer photography have distinct infrastructures that explain some of the differences in ICT-based non-professional photography.

Film-based consumer photography had, in practice, four main components that the snapshotter had to interact with: a roll of film, a camera, paper prints, and an external service used for buying cameras and film and for developing and printing the pictures taken. The dominant business model in consumer photography included providing the snapshotter with maximal ease of use: by making cameras usable and outsourcing to companies everything that could make taking and using photographs difficult. Selling film, developing, and prints became major sources of income for companies involved in
the photo business. This film-based business dominated consumer photography for almost a century, from the late 19th century to the 1990s.48

When compared to ICT-based photography, this set of four components that a user interacts with and its single dominant business model has not remained stable. A mobile camera-phone is a case in point: it requires no film, it is not sold primarily as a camera, there is no need for an external service to process the images, and there is no requirement to create paper prints. The business models surrounding camera-phones are, accordingly, organized very differently when compared to the models seen with film-based mass-consumer cameras. In ICT environments, the business models are far more diverse. A camera-phone and a digital camera can be connected to a variety of ICT devices, and the digital images can be viewed, edited, stored, and transferred with various applications.

Many digitally networked cameras are extremely networked hybrids, connectable to various infrastructures. The camera-phone provides a good example here too: a picture taken with a camera-phone can be transferred with various data connections, such as 3G, Bluetooth, GPRS, WLAN, infrared, and USB, to and from one of these devices. This makes it possible to share pictures across vast distances and via a wide range of applications.

ICT-based photo networks are usually created, maintained, and sold by private companies. This means that their technical considerations have to fit current post-Fordist business models, providing revenue for employers as well as, in many cases, for shareholders. The way in which a technology is implemented supports the business model of the provider of the technology. Consumer use of photo technology has to be aligned with covering the costs of making that technology available and keeping it working properly.

For example, many popular photo-sharing Web services, such as Finland’s Kuvaboxi, discussed above, offer their service free of charge. The business model of these services is to sell advertising space on the Web site next to the shared photographs and in some cases sell information on users’ behavior to third parties. The requirement to sell advertisement space on the service’s Web pages drives the technology to support

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48 The most influential company in this field, Kodak, was unable to find a profitable business model for the networked “camera” and filed in January 2012 for bankruptcy protection. The future will show, if their patents for digital cameras will help them to remain in business. See http://dealbook.nytimes.com/2012/01/19/eastman-kodak-files-for-bankruptcy/, last accessed March 15, 2012).
certain kinds of uses, with one concrete example found in how the Kuvaboxi service changed its operation logic to better suit models for selling and creating advertisements.

Originally, when first made available, Kuvaboxi facilitated only private sharing of photographs, because it wanted to provide a digital means for the “Kodak culture” to share pictures. All users of the service had to have an account, and photographs could be shared only with people who had an account. The interviews with Kuvaboxi developers indicate that the service was changed to include publicly shared folders and tagging so as to generate a more attractive service for sale of advertisement space. Publicly available photo galleries (see Figure 37) were implemented to let unregistered users access photographs uploaded to the service and hence generate more Web traffic, which was then used as a sales argument to potential advertisers. The tagging feature was added so that advertisers could match their advertisements with the tags (i.e., keywords) to better target their commercial message. For example, photo galleries tagged with words such as “holiday” or “Canary Islands” would enable advertisers of travel services to target their message better.

Figure 37. A public photo folder in the Kuvaboxi service. The tags in the middle of the screen facilitate search and browsing but also help advertisers target their marketing.

In the case of Kuvaboxi, the changes prompted by the business model of the service had a profound effect on the ways in which the users of the service could share photographs
and the ways in which the service itself suggested that its users share photographs.
Although private sharing was still possible, the public sharing of photographs became very much promoted. To quote again Heikki:

Various competitions encourage people to share their photos publicly, and they actually have a strong effect on how many photos are shared in this way. In sharing of public photos, it is easier to advertise by targeting specific users, which brings revenue to the service. These competitions also draw over a million people to the MTV3 site, to which Kuvaboxi is attached. (Heikki, Kuvaboxi maintainer)

In a broader look at photo-sharing services, the main forms of gathering revenue for photo-sharing sites are 1) selling advertising space, especially for targeted marketing; 2) selling user information as market data to third parties; 3) having users pay for the service or having “premium users” pay for additional services; 4) getting state technology support or funding from venture capitalists; and 5) trying to sell one’s platform to a high bidder, as happened, for example, with the founders of YouTube when they were selling their service on. In all cases, user-generated content, in the form of log data, text, pictures, audio, and video, is often an important part of the revenue gained, turning private information into a leveraged commodity. The business models of these services lead to technical decisions facilitating both gathering and display of economically relevant information.

Many services used for photo-sharing and display thus bring together several visual orders. The panoptic model is employed for collection of behavioral data “represent[ing] parameters of the […] victim’s] natural behavior, which are subverted in order to entrap it” (Gell, 1999: 201). The subversion, based on data gathered with a panoptic model, is displayed with the aid of a synoptic model, showing advertisements or other targeted messages as part of significant private and emotional communication. The trap thus created is in its most functional form self-correcting, urging the user of the site to continue using it and giving the service provider both behavioral data and people to target advertising messages to. Here a form of customization via user-created content is important, providing additional value to those being entrapped: giving them means of communication that help them share what they have seen, heard, and experienced with significant others.
For example, various social networking site profile pages can be customized with specific applications, RSS feeds, one's own media content (text, photos, music, and videos), and the like; and cellular phones allow ever more for individualized experiences in similar ways. The “image” of these products is thus more dependent on a symbiosis between the tactics and strategies of the two players: companies creating products and customers buying and customizing them.

Photo-sharing sites, consistently with other social media, have created special interest because they explicitly fuse tactics and strategies, giving users opportunities (within limits) to express themselves with various media and publish these expressions to wide audiences. As Manovich writes, “not just particular features of particular subcultures but the details of the everyday lives of hundreds of millions of people who make and upload their media or write became public” (2009: 324). ICT companies thrive on this idea, because it means that they can be in between various mediated human interactions.

This “in-between” position is gained in various ways: first, enabling capture of data, by selling equipment to this end (such as cameras, cell phones, and microphones) as well as selling new software versions that fix existing bugs and provide for better usability; second, helping to transmit the captured data further (e.g., to Internet sites, by selling cables, access to wireless transmission technology, various hardware devices – laptops, routers, and screens – etc.; and, third, providing actual admission to these Internet sites, by creating premium-user business models, selling user data on, showing personalized advertising, and selling virtual gadgets. Fourth, the storage and further use of the media content provide business opportunities, such as sale of storage space (external drives or space in the Internet “cloud”) and new carriers for the media content transmitted (albums, mugs, t-shirts, etc.).

The “trajectory towards constant capture and broadcasting of one's everyday life” (ibid.: 325) is a gold mine for various ICT companies. Therefore, it will remain a powerful vision for further ICT development, though not necessarily emancipating end users. The business models of photo-sharing services are especially problematic from a user perspective if the service providers claim a right to all content shared via their service, as done with commercially successful services such as Facebook (Andrejevic, 2011). Here private content, understood by many users not as a commodity (Rose, 2010), is explicitly turned into a marketable commodity, usually at the end users’
expense. The exchange of looks and mutual interaction becomes a source for capital interests.

**Undesigned effects**

Open designs are often intentionally designed artifacts that do not confine their use to one or a few techniques of the body, whereas closed designs usually limit the use of an artifact to very specific tasks. The designed intentions in the artifact are in both cases designer-driven and apply a perspective from which the designer or artist of an artifact has agency over other users in the use of the artifact. The decision between open and closed designs is often influenced by the business models of camera producers and photo service providers.

Almost all artifacts, be they created with closed or open designs in mind, afford effects that are undesigned and often unexpected. Here we can differentiate among use innovativeness, technical mediations, and social constraints.

![Figure 38. An Olmec boy's body is decorated with a glass bottle.](image)

Use innovativeness (Arnould, Price, and Zinkhan, 2003) denotes uses that are unintended by the designers of artifacts. A good example is the use of a soda bottle for ritually decorating one’s body, as done in the example shown in Figure 38. Here an Olmec boy’s body is turned into a special kind of image *in corpore* with the aid of a glass bottle originally designed for preserving beverages. The section on “Culture jamming”
provided a variety of examples of use innovativeness, focusing on the examples of Barbie Liberation Organization, Deportation Class, and Nikeground.

For digitally networked cameras, some of these use innovations have been also listed above, such as use of a camera for note-taking or as a mirror, but these devices are also used, for example, as light sources in the dark or, like memory sticks, as storage devices for digital information. These use innovations are in networked camera environments often turned to specific software applications, now intending to support a use that had previously remained unintended. In discussing intended and unintended uses, it has to be kept in mind that often it is difficult to say without clarifying the intentions of camera designers which uses actually are innovative use and which not. In some cases, designers are well aware of special uses even though they do not frame the use of their artifacts in that way.

The importance of technical mediations is especially evident in digital photo services, which store photos and videos on their servers as part of provision of their services. The Kuvaboxi service, to take one example, has experienced server breakdowns that left it unable to recover all files uploaded, which was also one of the fears end-users had, explored in “Dealing with privacy in photo-sharing.” Also, many major companies have lost confidential user information because of third parties being able to break in to their services. The technical mediations matter, because materiality “strikes back,” working counter to human intentions at times.

Social constraints on camera use often restrict the use of cameras in the first place, as in the “Kodak culture” not taking photos of family members in unpleasant circumstances. Some of these social constraints are designed into artifacts, but if not, they come to the fore afterwards. This is the case in the examples of photo-sharing wherein new negotiations are taking place on how to share what kinds of images, with whom. As a broader example, Google Street View raised a lot of concern among individuals in countries such as Germany and the U.K. when the first images of city streets, including people and houses, were collected and published on Google's Google Maps Web site. In Germany, over 244,000 people objected to Google's publication plans, and the German Federal Ministry of Food, Agriculture and Consumer Protection helped citizens to do so. After the publication of the fact that Google had gathered

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personal data from unsecured WiFi networks when collecting Street View data, as well as using – without consent from users – Google Mail data in the creation of its social networking service called Buzz, the U.S. Federal Trade Commission subjected Google to independent privacy audits that are to continue for the next 20 years.50

The success story of digitally networked cameras has to deal with emerging societal tensions, technical mediations “striking back”, and use innovativeness countering intended uses.

Networked connectivity

An important use of cameras in the empirical examples is the desire to connect people not sharing the same place and time. This is seen when people send images to each other via mobile camera-phones while at leisure and in the case of automatically providing photos and videos of kindergarten life but as well in the interventionist techniques of appearance as an image in corpore in order to be depicted in effigy in mass media, to be seen by other people.

The visual bridging of space in time has become especially important for people living in surmodernity (Augé, 1994), with an abundance of events, space, and individualization of references. As claimed, services allowing access to predefined locations, such as one’s home, children’s kindergarten, or work, supplement this trend. The kindergarten case study exemplifies a service that uses the affordance for networked connectivity in networked camera use to cater to parents who try to be both good workers and good parents. Without the system, the parents need to decide where to remain in corpore, making it more difficult to have at least a glimpse of what is happening elsewhere that is considered of importance. When having to juggle various roles in the course of everyday life, many parents welcome such photo- and video-sharing services because these help them follow their children’s life actively while themselves being at work. (See also Jørgensen, 2004)

The “camera” is understood to be part of surmodernity. Networked cameras are here used in order to help in shrinking spatial distance to bring people together, even if at a distance, while at the same time providing for novel events and an increase in representational space.

The development of technology thus enables specific kinds of social changes, although it is often difficult to say which comes first: a desire for change or a technique available for fulfilling it. As people are ever more on the move; live in different places; and connect to various people, places, and ideas individually, the artifacts at hand assist in these acts. Camera systems let us stay home while videoconferencing, as well as go to work and use Web interfaces to check on those important to us, be they at kindergarten

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51 Part of this sections work has been developed further (including the part on business models above) from work developed together with Sarvas, and presented at Lehmuskallio, and Sarvas 2010. Our discussions have been extremely helpful for this, and Sarvas has kindly agreed to me extending and reworking some of our thoughts here.
or somewhere else. Without current camera technologies, affording networked connectivity, we could not do so.

In the following I will draw from the discussions on “A brief history of converged techniques” in order to point toward the networked character of the hybrid things we are used to refer to as “cameras.” Here variation in the complexity of networked camera systems is introduced. Since networked camera systems are usually not coherent, bound “wholes,” the heterogeneity of the actual camera networks found in people’s homes is pointed at. Both infrastructural maintenance work, or “infrawork,” as well as techniques of automation try to counter this heterogeneity of networked cameras, and they are given separate attention.

**Networked hybrids**

Cameras and, accordingly, pictorial media today in use generally converge various techniques, foregrounding the hybrid character of networked cameras. The devices in use are highly networked hybrids, affording novel kinds of recombinations that would have required loads of manual work in the analogue “film era.”

With the introduction of ICT to cameras, many communicational changes in picture use are possible, mainly due to the facilitation of a rapid increase in automation and recombination (or convergence) of previously separate elements (such as phones and cameras being recombined into mobile camera-phones) and the possibility of using, storing, and distributing large quantities of data (cf. Lievrouw 2002; Seipel 2002).

The techniques converged within single devices afford actions such as representing the seen, extending the reach and the scope of the visible, fixing the seen in time, reproducing representations of the seen, transmitting the seen in space, and converging the seen with other kinds of information, as outlined in the “A brief history of converged techniques” material.

The novelty of digital cameras is not that they afford these uses but, rather, that digital cameras are built with the aid of technology that enables creating various recombinations of several techniques in a single device, or a networked camera system.

Hybrid camera technologies differ in their degree of complexity, depending on designed intentions, the technical complexity of the artifacts, and the extent of the automation employed.
From the perspective applied here, stressing the importance of our bodies for image use in the first place, the body as a location of images is itself already able to represent the seen in memories, dreams, visions, and hallucinations, as well as use these means to see more than simply meets the eye. These techniques of the body help in fixing the seen and converge it with other kinds of information, but reproductions of the seen and their transmissions for others have always had to rely on mediations, such as telling others about what one saw, drawing the seen in sand or on walls, singing about it, or translating the seen in other ways.

Looking more closely at the different kinds of visual devices used for being able to represent the seen, or transmit it to others, for example, we can distinguish various levels of activity the devices themselves are capable of. Werner Rammert (2008) has suggested a five-level distinction, which is useful for a first elaboration of visual devices’ degrees of complexity, but, as will be shown, it does not account fully for the hybrid and networked connections that networked cameras currently often make. Rammert distinguishes among “passive,” “semi-active,” “re-active,” “pro-active,” and “co-operative” systems.

Passive instruments are moved completely from outside and cannot be self-activated. Drawing aids for perspectival paintings are an example of passive visual instruments that rely heavily on bodies using them. Bodies have to activate them and use them as part of techniques of the body if they are to make any sense at all in helping the body to extend, distribute, and delegate its actions. For example, in the desire to fix the seen, the drawing aid for perspectival paintings depicted by Dürer in his Draughtsmen Drawing a Lute has to be actively integrated into techniques for fixing the seen in order for the artifact to have its proper effect (see Figure 8). Without manual assistance, the drawing aid remains useless.

Semi-active instruments have an aspect that is self-acting, often a motor-like device that mechanically does the work that would normally be done manually. Digital cameras, for example, usually go back to picturing mode after a photo has been taken, thus eliminating the need to “wind the film” for the next shot as done with many film cameras.

Re-active systems have feedback loops, adapting to changed conditions, as when cameras automatically adopt the correct exposure settings after changes in light. These are in use in many digital cameras.
Pro-active systems have self-activating programs, as seen in the kindergarten example in which teachers and children used the Meaning prototype. With the aid of the software, after a photo or video was taken with the mobile camera-phones in the kindergarten, it was automatically uploaded to a server accessible to parents.

Co-operative systems are distributed and self-coordinating, and they perform a variety of tasks without manual intervention. In the U.K., for example, some surveillance cameras at gas stations are equipped with automatic license-plate recognition, which automatically compares the information depicted with an external CCTV database. If the co-operative system concludes that the license plate indicates problems, pumping of gas is not authorized.

**Heterogeneous networks**

![Figure 39. The paths that digital images may take in heterogeneous networks.](image)

The degrees of complexity suggested by Rammert are useful for a distinction among different kinds of devices. But looking closely at the things used in contemporary ICT-based non-professional photography makes it clear that these already form a network of devices, programs, standards, cables, and services that makes it difficult to maintain the distinctions drawn by Rammert. Much due to the variety of potential interconnections
among things, people’s networks for camera pictures are constellations of heterogeneous networks that are made to work together in order to “do photography.” The ways in which these networks are set up and combined affect how networked cameras mediate people’s photographic practices (see Figure 39).

When examined closely, all informants in the various empirical studies had different infrastructures for using camera pictures. Although digital technology tends to give people the ability to take more pictures than they did during the film era (mainly because of the costs involved in buying film, developing the exposed negatives, and printing the pictures), a bottleneck to actual use of a larger number of photos is the difficulty of managing them after having transferred the pictures from the camera. As an example, the people studied used different software for managing the photos, influencing how photos could be used.

Several participants in the first study discussed filing their photos in folders provided by the operating system of their personal computers. These folders were used to organize and manage the digital photographs. When trying to use existing photos for specific purposes, these participants needed a lot of time to find the correct pictures. Here a simple choice in material mediation requires extra effort and discourages future use of very many pictures.

In contrast, the participants in the kindergarten study used a dedicated photo management program specifically designed to automate and facilitate the management and organization of photographs. These participants were able to upload, browse, and handle a wide variety of photographs with the help of the program. There is no need for manual recording of the location and time of each photograph, and the tool also provides keyword annotation and visual browsing for organizing the photographs.

This tiny difference in photo management affects the workload of using the camera pictures taken. In comparison of just these two ways of using snapshot photographs, the choice of a program for photo management clearly plays an important role in pictorial practices.

A further example of heterogeneous networks comes from a participant who used the online photo-sharing and archival application Flickr for distributing his pictures to various groups of friends, relatives, and acquaintances. At the time of the study, Flickr afforded only sharing with predefined groups: oneself, family, friends, and everyone. Because of this, the participant had to create several Flickr accounts in order to assure
that the right people got the correct pictures without gaining access to photos he did not want to share with everyone. If he had used another photo-sharing service, he could have done all of this with one user account, but, then again, his photo network would not have connected with the heterogeneous networks of the people close to him.

Thus the networks used by people participating in non-professional camera picture use differ, often significantly. They influence the ways in which people are able to do photography.

**Infrawork**

The heterogeneous networks in ICT-based photography create extra maintenance and set-up work. Because of the variety of ways people can (and know how to) combine photography-related techniques, practically every photographer's network is unique. As the examples above illustrate, the introduction of a single component to one’s network can significantly affect the whole constellation for technology use. The hybrid and heterogeneous nature of the networks means that the interconnections of these technologies require maintenance work.

A further complicating factor is that designers of technology components can never know in advance what kind of installed base a snapshot photographer has in her photo network (cf. Shehan and Edwards, 2007; Edwards and Grinter, 2001; Edwards, Newman, and Poole, 2010). Therefore, new components are often designed to be installed by several means, embedding various existing standards for interconnections and thus affording varied uses. Although this provides for flexibility, end users need to do infrastructural maintenance work, or “infrawork.”

For example, the introduction of new components to participants’ photo networks requires infrawork in the form of updating printer drivers on a PC, installing dedicated interconnection software between a PC and a camera-phone, configuring network preferences on the phone, updating to the latest version of the Web browser on the PC, restarting the camera-phone occasionally, creating a user account for a Web service, remembering to charge the phone more often, and so on. All of this work is critical for people to be able to use the devices as components of their network for photography.

But it is not only the further use of pictures taken with cameras that creates infrawork; cameras themselves need special attention if people are to be able to use them. Easy-to-use digital point-and-shoot cameras, for example, are sold with a wide
variety of accessories assisting in interconnection of the camera with one’s body, for example, with a separate wrist strap, or to other technical devices, which do not follow a universal standard. As an example among many, the highly popular Canon IXUS is supplied off-the-shelf with three kinds of cables (AV, Interface, and HDMI), which allow connecting the device to printers, computers, and television sets. Most of the devices the camera can be connected to are not produced or sold by the company, but it insists that the accessories used be “genuine” accessories, and manufacturers of printers, computers, and TVs too insist on use of the “genuine” accessories they sell.

In contrast, the infrawork in film photography was minimal because the interconnections were few and simple. All of the technical complexities and interconnections were hidden from the consumer by specific standardization (i.e., a standard 35 mm film roll), abstraction (i.e., the consumer cameras were “black boxes” with few functions and means of interaction), or externalization (i.e., the complex process of film development and printing of photos was an external commercial service).

**Automation of social action**

Automation in a way answers the problems posed by cameras being hybrids in heterogeneous networks that need infrawork in order to be connected to other parts of these networks. The more the use of non-professional photo technology is automated, the less difficulty end users have in actually connecting their photographic equipment to their personal heterogeneous networks, which obviously affects their opportunities for varied use.

ICT has facilitated the automation of various activities that were earlier interrupted at some point, then requiring manual labor. In capture, editing, and sharing, various processes are automated. Cases in point are adding automated metadata to pictures during capture (e.g., time, location, camera model, aperture, or any Bluetooth devices in the vicinity), automatically suggesting people to be mentioned in tags when one is sharing photos (cf. Naaman and Nair 2008), and automatically sharing people’s pictures to a dedicated Web-site if they do not perform the infrawork necessary for changing their transmission settings.

Photo-sharing does not have to be done in only one way (cf. Besmer and Lipford, 2010); it can be automated in very different ways. The choice of an online photo-sharing
service forces the user to use that service's way of automating the photo-sharing process, thus the implementation of automation having agency in mediated social interaction.

Although automation seems to be a straightforward answer to infrawork, the automation might actually create a host of problems that possibly expand rather than eliminate problems, as has been suggested for industrial processes by Bainbridge (1983). Automating mediated social interaction often questions conventions of social interaction. There are various examples of people experiencing unintended consequences because of not understanding how new technological environments work – for example, by sharing pictures and related data with unintended recipients or by accidentally making them publicly visible for all to see. In some cases, the unintended recipients take actions against the original distributors, laying them off from work, suspending their university studies, or re-evaluating the mutual relationships in another way (e.g., Lipka, 2008).

Automation can also lead to stakeholders intentionally using third-party data for targeted marketing, such as displaying tourism advertisements besides personal pictures of a vacation trip. Some cases have been seen of personal data being directly linked to third-party sites, turning private interaction into a public commodity business. A prominent example is the Facebook Beacon case, in which Facebook users learned that their username and profile picture are used for advertising recently purchased items to their social networks (cf. Perez, 2007). In many cases, intended and unintended consequences merge, such as when people try to capitalize on personal information, including photos, from their social networks but only later learn that they are unable to control what will happen to the leaked material.

Thus the automation of mediated social interaction affects the ways in which people relate to each other via various sharing services. An important part of the automation is the material traces left by the interactions, which enable the further use of once-mediated material. Technically some traces can be erased after each interaction, and some have suggested, for example, e-mail services that delete all sent and read messages. The same could be done with photos in photo-sharing services.

The degrees of complexity suggested by Rammert (2008) and discussed above are a useful way to compare various devices on their own and to show significant differences in their capabilities for self-initiated action. But, as shown in the empirical use of digitally networked cameras, the networks used in order to plan, shoot, edit, distribute,
exhibit, and archive pictures are heterogeneous and often need considerable infra-work in order to “fit” together.

This suggests also considerable differences in the degrees of automation between individual photo networks (cf. Parasuraman, Sheridan, and Wickens, 2000, 2008; Dekker and Woods, 2002; Dekker and Hollnagel, 2004). For specific pictorial activities, the shooting, editing, and distribution can be highly automated while exhibition and archival rely to a great extent on manual work. Other pictorial practices need a large amount of planning and organization before shooting itself can begin, and here editing and distribution may to a large extent be manual activities whereas exhibition and archival are automated with the aid of specially designed programs. Looking again at The Daily Mugshot, especially a typical use of the system (see Figure 40), we can see that the initial idea and the planning of taking pictures here require manual work, whereas the webcam use is semi-automated because of the service accessing the user’s webcam. The editing phase gives the user the possibility of influencing whether the picture taken will be uploaded or not, but after that decision is made, the distribution, exhibition, and archival of the pictures are highly automated and cannot be influenced directly by the user.

Figure 40. An example of the varying levels of automation during the process of using the Daily Mugshot service.
In contrast, a typical user in the empirical studies conducted on snapshot photography often used different means for each part of the picturing process. The camera used was often not connected to a seamlessly automated network, in which the image software provided for shooting, distributing, exhibiting, and archiving, but these had to be done often by hand (see Figure 39). Although the separate processes, such as distribution, may have been automated, manual infrawork was needed between all of these steps.

Depending on the actual photo infrastructures used, the level of automation for each part of the process differed significantly. There is great difference if the photos taken are printed out and sent in letters to peers or if one’s mobile camera-phone has special software that can be used to automate the upload of images to a server that others can access. As seen with the empirical examples, the components of one’s infrastructure can influence – at times heavily – the ways in which digitally networked cameras are used.
Convergence

There is enormous variety in affordances, as well as in the uses of networked cameras. As suggested, images in effigy, the indexicality of cameras, and the camera as an object focusing mutual attention are important ways in which networked cameras afford specific uses. The networked connectivity allowed by cameras being networked hybrids that enable the convergence of various techniques is somewhat constrained by the heterogeneous camera networks that people access from the home. The heterogeneity of camera networks calls for special attention to infrastructural maintenance work, which is only partially resolved by ICT designers through application of automation.

In thinking about current uses of cameras in the “cam era,” the convergence of techniques in networked cameras needs special attention. As suggested, digitally networked cameras converge various techniques of the body, and at the beginning of this work, I focused on showing historical examples of this process, with the aid of an image in the service Panoramio. Techniques such as representing the seen, seeing more than meets the eye, fixing the seen in time, reproducing it, transmitting it in space, and converging the seen with other information have been complemented in the empirical case studies with techniques for bonding with others, for presenting one’s self and social peers, for communicating emphatically, and for mnemonic purposes, just to list important reasons for engaging in the pictorial practice called the “Kodak culture.” In sharing of photos publicly, techniques for getting to know people with similar interests, gaining financial benefit, or having fun are explored with the help of networked cameras. In the kindergarten case, techniques for obtaining information about a child, expressing experiences, playing with peers, providing education, supporting a child’s development, reporting on children’s activities, and learning about the kindergarten were looked into, and in the culture jamming case study we saw techniques for mounting visual critique, disseminating it to wide audiences, but as well means for self-expression and ways of connecting to like-minded people. Already these examples show that networked cameras are used for various purposes. Cameras afford a wide array of uses.

The diverse techniques explored are just a snapshot of other kinds of uses that cameras are put to, and the discussion of asymmetrical orders of the visual shows, for example, that cameras are used in specific settings to control others or to engage them in an interaction intended to lead, for instance, to financial transactions.
Today, digitally networked camera technology is increasingly the realm of ICT companies, and here we find both the creation of open designs, with its attempts to engage people in using camera devices for various purposes, and very specific closed designs with applications fitting a particular technique of the body.

Today, when we want to record quickly what we see, we can, for example, use an application called “Fast camera” on a mobile camera-phone; tapping the application icon causes an override of the native camera application, with the phone then shooting pictures until we manually intervene in the process by pressing a “Stop” button. Other applications allow for automating the transmission of the seen in space after photo capture, as done with the Meaning application in the kindergarten study, giving third parties almost instant access to the images sent. Constantly streaming Web cameras that take several pictures at short time intervals and transmit them to external servers are accessible via Web interfaces or cell-phone applications such as Live Cams, Kelikamerat, or Spy Cams. These enable us to see that which would remain invisible, if not distributed via networked camera systems. In short, what we see in corpore can be represented, fixed, reproduced, transmitted, and converged in effigy in various ways, on a scale impossible a few decades ago.

The representational sphere has exploded, and when one goes through research papers, magazine articles, Web pages, and television programs, it seems that very few areas remain untouched. Domestic life, hobbies, work, travel, and our social interactions are mediated heavily via digitally networked cameras. As techniques of the body are assembled with ever more networked cameras, we find ever more pictorial practices.

In the following I will discuss ways in which convergence of various uses of cameras shows in the “lives” that non-professional camera use takes, from access to camera devices, and learning to use them, over preparing to “be in effigy” to considerations regarding distribution and archival of camera pictures. Here, as before in this discussion, insights from the empirical case studies are coupled with further non-professional camera uses, in order to connect the empirical findings to wider phenomena in a “cam era.”
**Access and learning**

*Individualized access to visual devices.* The pictures taken of us, and the pictures shown to us, are today complemented with user-generated material of various kinds. Because of mobile camera devices being manufactured *en masse* and people carrying them around, ever more people are able to turn the images they keep *in corpore* to images in effigy, thus partaking in visual discourses. Partaking in the “Kodak culture,” sharing depictions on photo-sharing and social networking sites, documenting kindergarten life, and mounting some form of visual critique have all become increasingly popular.

The access to cameras is due to their low price, ease of use, and availability individualized, especially in the so-called West, where many teenagers already have their own camera devices that they do not have to share with anyone else. The family camera used in the film era has been replaced with several individual cameras. Thus also the common finding in older research on snapshot photography in a “film era,” namely that snapshot photography mediates only a specific look, usually that of the father or mother equipped with a camera, is holding somewhat less true now, since today also children may take pictures of things happening, creating their narrations of events as they happen, as shown in the kindergarten case.

The variety in picturing seems to be almost as great as that in the kinds of looks we adopt towards each other. But just as our interactional looks are organized, so are the ways in which we use camera devices. The “Kodak culture,” the ways we share photographs on photo-sharing sites, the patterned use of cameras in a kindergarten, and the means to attract public attention to one’s cause are all examples of patterned uses of these devices that we have access to. The use of pictures is not random but organized in meaningful ways.

Given the availability of cameras, it is no wonder that they are used for various purposes in addition to those documented in the case studies. The torture photographs taken at Abu Ghraib are a notorious example of increasing use of camera devices, which may include use for transmitting gazes we don’t feel comfortable with (Gunthert, 2008). Today, mismanagement is more often documented, and then disseminated. A famous example is the 1992 civil unrest in Los Angeles, which was partly sparked by footage filmed by George Holliday from his apartment. He happened to have his camcorder at hand when police officers used overt violence in capturing Rodney King. The footage
was used for creating media attention, and it was widely covered in U.S. news. Many claimed that the video-recorded example made a more deeply rooted practice visible. After being charged, several police officers were acquitted, which sparked demonstrations that turned violent.

In many other cases too, mass media have used footage filmed by non-professionals. Amateur cell-phone photographers and videographers provided important content in the case of the aforementioned tsunami, and by the time of the London bombings in July 2005 some of the most circulated pictures were taken by amateurs on the spot.

Today several newspapers publish user-created photos, which often focus on newsworthy events, funny situations, or “beautiful” photography. Entrepreneurs provide end users with mobile camera-phone applications such as Scoopshot, which “brokers news photography between mobile Scoopshooters around the world and the international media through the Scoopshot Store.” The service enables crowdsourcing photographs for a wide variety of topics, and, for example, the media, search, and marketing company Fonecta was asking, at the time of writing, for exterior photographs of Finnish companies, paying €1.50 for each photograph accepted, which is significantly less than the company would have to pay professional freelance photographers.

Individualized access to visual devices seems to provide us with ever more documents of the various ways in which humans interact with each other, although in these cases always mediated via camera technology.

*Learning translocal pictorial practices.* Most of the people interviewed had learned to be depicted with cameras during their childhood and started to contribute pictorially in their teens with their first cameras. Here face-to-face interactions, showing how images *in corpore* are turned into images in effigy, are of special importance in learning how to pose “the right way.” The kindergarten case shows that this has changed. Children today take their first pictures as toddlers and learn to use cameras as communication media early on.

Although snapshot photography as discussed with the concept of the “Kodak culture” is very much learned in face-to-face interactions, the interviewees did mention

53 See [https://store.scoopshot.com/task/1000022](https://store.scoopshot.com/task/1000022) (last accessed on September 1, 2011).
various sources of images in effigy that influenced the ways in which they were taking pictures. In view of similar findings about the kinds of snapshot images captured in various countries, it seems safe to say that snapshot photography is actually an early translocal practice.

As we have seen, interventionist techniques, in contrast, are actively propagated via workshops, do-it-yourself books and leaflets, and Web sites explaining concrete ways of intervening in mass-mediated imagery, using the imagery for one’s own purpose. Here, face-to-face interactions provide a first contact for only some, such as the interviewee who learned early on that military planes can be painted in pink as well, whereas many dealt with images in effigy before starting to rework them for their own purposes.

With the recent emergence of ever more pictorial practices, the speed at which these translocal pictorial practices are taken up in various places, around the world, is especially noteworthy, pointing to the importance of mediated imagery for our everyday life. The networked character of camera use affords rapid spreading of pictorial practices.

**Preparing to appear in effigy**

*Various forms for appearing in effigy.* Learning pictorial practices includes knowing how to appear in effigy. With ever more of our actions depicted, people have actively started to learn how to appear *in corpore* so as to perform well in effigy. Today, being on camera is learned early on. Those interviewed remembered being depicted by their parents and close relatives during their childhood. In contrast, many of them were taking thousands more pictures a year of their own small children. In consequence, very small children are already learning ways to pose for the camera, and, for example, in the kindergarten case, the children depicted tended to perform for the camera in various ways, singing, dancing, and making funny faces.

Whereas the first empirical case studies presented earlier show ways of turning one’s body into an image that attracts the attention of a person usually known well to oneself, the activist examples show ways of turning one’s body into an image *in corpore* in order to be depicted in effigy in mass media. Here bodies take special form, often mimicking figures from synoptic gazes, as when dressing up in line with the corporate
image of known companies, such as Lufthansa (in the deportation class campaign) or Nike (in the Nikeland campaign) or presenting themselves as if specific figures known from mass mediation, as when the activist from the Fathers 4 Justice campaign turned up in a Batman costume.

It is important to stress the difference in the looks anticipated in turning one’s body into one or the other kind of image. In face-to-face interaction, this is often done by presenting oneself as a moral and trustable character, according to assumed shared ideals. Explicitly doing something considered deviant, or even immoral, attracts outside attention and can be used for harnessing it.

There are various further examples of how images are used as acts for non-professional purposes, in which attention is sought by explicitly doing something “differently.” For example, some Muslim women have started to propagate Pink Hijab Day, as an image act in seeking new reactions to stereotypical ways of presenting Muslims in mainstream media (see Figure 41). Depictions of Muslim women in mass media are part of creation of a specific Oriental gaze (Said, 1995) with which some Muslim women do not feel comfortable. Via presentation of one’s self differently in everyday interaction, new reactions are sought. By changing one’s image in corpore, especially if it seems to be unconventional, is a way to generate discussion about “proper face,” and thus of normalizing judgements available.

Pink Hijab Day began small, in a high school in Columbia, Missouri. Several girls decided to wear pink hijabs one day to encourage others to ask questions about their hijabs and about Islam. Their intention was to question stereotypes of Muslim women, raise awareness of breast cancer, and provide an incentive for non-Muslims to start a discussion with Muslim women. These media-savvy techniques helped to get Muslim women portrayed in mainstream media – but this time on their own terms. Quickly Pink Hijab Day spread via mass-media news, blog posts, e-mail lists, and social networking sites to various other cities and countries as well, and today Pink Hijab Day is observed in several cities, around the world. A local practice, with images in corpore noticed by others, has spread via images in effigy to other parts of the world.
Translocal pictorial practices do not always have a message apart from trying to catch attention and get people to laugh. “Planking” is a recent phenomenon that purportedly involves hundreds of thousands of people, lying face-down with a straight and rigid body, arms at one’s sides, with toes pointing toward the ground (see Figure 42). Although multiple people have been claimed to be the inventor of planking, usually
between 1994 and 2008, the pictorial practice, once covered by mass media and spread via social networking sites, became a translocal practice found around the world.

The speed, scale, and scope of the spread of these phenomena is special, with the *slut walk* serving here as a final example. This, since its first appearance, in Toronto on April 3, 2011, has spread around the world via digital mediation. In just about four months, slut walks had been organized by local grassroots activists in New York, Delhi, Tampere, and Frankfurt, to cite only a few locations. The intention of the slut walks has been to underscore especially women’s right to appear in public in the kinds of images *in corpore* they please, without getting harassed. The point is made known to others by being distributed in mass media, as images in effigy.

These are examples of translocal pictorial practices that show the interplay between images *in corpore* and in effigy, and, as argued, that cultural dissemination “does not require physical proximity or a specific type of gemeinschaft ties, only social interaction, however (mass-) mediated and casual this may be – just seeing, hearing, or reading of one another may suffice for mutual imitation” (Brumann et al., 1999: S23). These disseminated pictorial practices are not exactly the same around the world, but they share enough traits in common that a person from a specific context might orient him- or herself in them elsewhere. They provide means for doing differently but, equally, means to connect to larger social movements. Wearing a pink hijab, demonstrating while dressed up as a “slut,” or turning up dressed up as Batman help in gaining specific kinds of looks that might be useful to further one’s cause. Bodies are turned into images that attract specific kind of attention.

*Post-production of images in effigy.* The snapshot photographers interviewed were usually well aware of the possibilities for editing but did not use the tools at hand. Since the quality of the final picture was for many not as important as the moment of taking photos itself, it is perhaps no wonder that editing was not considered an elementary part of snapshot photography – nor of the pictorial practices within the kindergarten.

The interventionists, in contrast, often edited their pictures heavily, using image editing software to turn the images in effigy into images with a mass audience intended. Here the pictures taken and distributed could not be of just any kind. They had to be constructed around a set of rules awakening the attention of photo journalists and picture editors in mass media.
Again particular applications have been built that make specific kinds of editing quite straightforward, such as FakePhoto, which helps in mixing two pictures into one with ease; My Sketch, turning automatically taken photographs into computer-generated “sketches” resembling sketches drawn by hand; or Hairstyle, changing the hairstyles of those depicted according to pre-selection from a catalogue with a wide variety of hairstyles.

Even easier, some applications let users choose a specific shooting style, often imitating camera or film types from the film era (e.g., the Hipstamatic or 8mm application), whereas others imitate other kinds of looking devices than a camera, such as the KaleidaCam, which takes pictures similar to the images seen with kaleidoscopes.

Also here, degrees of technical complexity and variation in automation matter.

**Distribution and archival**

*Distribution to a wide variety of recipients.* The ways of appearing *in corpore* already presume specific kinds of pictorial distribution. In the case of the images taken in the first case study, quite a few of the pictures were, in their visual form as well as in the ways those depicted were portrayed, clearly intended for only a few to see. Here some people were, for example, depicted in underwear, with messy hair, and in unfavorable poses, in domestic ways in which they do not appear *in corpore* in public. These private ways of being are reserved for the few around them, and the looks allowed are very restricted.

Other pictures, such as those taken in the kindergarten, were taken in a semi-public setting in which both teachers and children appeared in front-stage behavior but in ways that are intended for only the eyes in a specific social fabric. This is why, in this case, for example, restricted access to the pictures taken and shared was deemed important by parents and teachers alike.

Specific activities, such as the interventionist techniques, are intended for mass mediation, and here wide distribution and a focusing of shared attention are sought. The synoptic order is entered with the aid of self-made techniques.

Thus we have a layering of intended distributions, often already visible in the ways in which people prepare themselves for depiction. The more care devoted to preparing one’s body before a picture is taken, the more widely the picture taken may be distributed.
The “cam era” seems to be showing shifts in this layering, with some of those interviewed not caring about their private pictures being shared publicly, because they did not honor the indexical relation between them as depicted bodies and the depictions themselves.

Others again make conscious attempts to confuse existing boundaries, with interventionist techniques being one example but advertisers who use guerrilla marketing techniques serving as another. These kinds of iconoclashes are a clear part of the “cam era,” in which moving bodies, ideas, media, technologies, and money provide for novel reactions questioning established ways of maintaining face, and thus established visual orders. The intended image acts, at times questioning prevalent normalizing gestures, are not always easy to decipher by looking at a specific image in effigy alone.

Persistently exhibition and continuous archival. The images taken, edited, shared, and archived via digital means are exhibited and archived in specific forms. Many image-sharing services provide means to share and archive one’s images but do this at a certain cost. Because many providers enable the services by sharing advertising space and collecting behavioral data on those using the service, they are interested in collecting the largest quantity of data possible, without having to destroy some during the process. Additionally, since sharing occurs via copying, the copies created in sharing can, in turn, be shared onward via copying, at times quite quickly. This is why most information sent via these services is persistent and difficult to destroy, should that be needed. Although photo-sharing services could be for example built such that information is always destroyed at the location shared from, thus providing unique virtual goods, still there are more benefits for most stakeholders in ensuring persistence.

By being easily multiplied and persistent, information becomes searchable. Digital photographs consist of the information, in a specific file format, from which to create the actual image anew with the aid of software; automated metadata providing information on things such as the time and date of capture, the camera model, and shutter speed, usually in EXIF form; and manually added information, such as user-created tags, providing additional details. Other software can add its own information to the images, the imaginable forms of convergence of information in digital pictures thus multiplying and taking various forms.
With accelerated creation, use, and distribution of images, also the possibilities for search become more varied than one often considers when taking a single snapshot picture that mediates one’s look *in corpore*, translating it in effigy.

Nevertheless, in comparison to the number of images we perceive each day, multiplied by over 7 billion inhabitants of Earth, we know that the representational sphere is not yet even close to the number of images *in corpore*. The 20,000-photos-each-year figure cited by some of the people interviewed may sound like a lot, but it does not account for such a great slice of life when compared to our use of embodied vision. Most things we deal with are not represented in images in effigy: our representational spheres may still, and possibly will, grow exponentially.
Conclusions

Prior to the digitalization of image technology, non-professional camera use (i.e., mainly snapshot and domestic photography) tended to be a part of visual culture that was kept invisible from a general public. Snapshots were mainly shared with familial and other private social circles, by means of relatively homogenous, black-boxed film-based technology. With the digitalization of non-professional photography, some of these private snapshots are shared publicly and the technology used is hybrid, diverse, and especially networked. Today billions of photographs are taken and shared for non-professional purposes in various networks, which are designed differently and feature elements of varying technical complexity. Today, we are living in a “camera,” a time in which images taken with cameras and distributed further play an important part in our social interactions. Two major questions arise: how are these networked cameras used, and how do they mediate our actions?

Studies in visual culture and Bildwissenschaft, done increasingly since the 1990s, provide first answers in their focus on questions on images, vision, pictorial media, and visual culture. Several studies done under these headings have identified structuring gazes that situationally organize how looking relations are lived out, implying that image use in a networked “camera” might be patterned as well. Studies from media anthropological perspectives again, as well as in the field of human–computer interaction, have taken an interest in empirically studying the ways in which people live with and around camera pictures. Taking a closer look at related empirical studies on networked camera use done reveals that they have usually disregarded the rather theoretical work on images in visual culture studies and Bildwissenschaft. In this study, I have combined original empirical studies on non-professional uses of cameras with rather theoretical work informed by literature from visual culture studies and Bildwissenschaft, and thus provide a specific perspective that is useful in thinking about the ways in which networked cameras are used, and how they mediate our actions.

In doing so, I draw especially from the work of Belting (2001; 2011), who underscores the importance of regarding our bodies as a first location of images. We use our bodies in order to see images shown to us on pictorial media (such as television screens or framed photographs hanging on a wall), but also in order to create our own
images, that we can play out against other images around us. This can be done in corpore, when e.g. applying make-up, choosing specific clothing, or performing gestures in social interaction; or in effigy, when we for example use specific pictorial media such as photographs or drawings for doing so. Here the location of the image that we show others is of importance: there is a difference if we create images in corpore in social interaction, or rather images in effigy, as done when taking pictures with networked cameras and sharing these via ICT-infrastructures to others, who see these images in effigy for example on a mobile camera phone screen (instead of seeing the images in face-to-face interaction on our bodies).

This observation points towards the importance of techniques of the body that we apply in order to use images. In drawing from the anthropological perspective on images, as suggested by Belting, the body has accordingly also to be understood as the first location of techniques that we use in order to create images, be they in corpore or in effigy. In Belting’s work also the body is understood as a medium of images, which is why I choose to use material mediation as a concept when explicitly referring to the mediations provided by other devices than our bodies. From this perspective, the material artifacts that we use for creating images, such as networked cameras, have an integral connection to the body due to the use practices they become involved in. Only in distributing embodied action between bodies and material artifacts at our disposal, are we able to use material artifacts as part of techniques that are effective, and make sense to us. This distribution of action makes it difficult to decide situationally where a human agent ends and the material artifact begins, since the technique applied (such as taking a photograph with a mobile camera phone and transmitting it automatically to an external Web-server for others to see) is only possible with the help of both: our bodies and the material artifacts used.

At this stage it is also clear why especially social scientific work on practices has recently focused on the question of mediation, which in this study is articulated in asking how networked cameras actually mediate our actions. In these discussions, there is disagreement about the roles material artifacts take in mediating action. In this study I follow with the help of the notion of affordance the idea that material artifacts “offer” specific kinds of relational uses, enabling their use as media for specific actions, but not for all. These affordances, I suggest in following Rose (2010), do not dictate actions, but have to be “activated” as part of meaningful practices.
Applying this perspective to networked cameras provokes the question what these cameras actually are, especially in relation to a body that is understood both as the first location of images, as well as the first location of techniques. I suggest, in looking closer at the techniques decipherable from a photo shared on a photo-sharing site called Panoramio, that networked cameras converge various techniques of the body that have been partially materialized into the artifacts at our disposal. In describing a brief history of converged techniques, I outline specific desires for techniques, such as the desire to represent the seen, or the desire to transmit the seen in space for others to see, which have historically found various materializations. The mirror, the *camera obscura*, and the eye tracker are all examples of material artifacts that have been invented helping to meet the desire to represent the seen. This perspective is helpful, I suggest, in order to show that networked camera technology relies on inventions with a surprisingly long history, and that desires for techniques can be met with various, at times very different material artifacts.

Related work in visual culture studies has been pointing towards the asymmetrical uses of pictorial media, usually helping those in power to influence the kinds of images in effigy we get to see, and to provoke us to adopt disciplinary techniques, such as presenting “proper face” as an image *in corpore*. These are discussed under the metaphors of synopticon and panopticon, and I suggest that these visual orders are still an important part of networked camera use. For example, with the aid of digital traces left with the use of networked cameras, a panoptic gaze is maintained in many camera systems. On the other hand, most commercial stakeholders providing these systems in the first place use the data gathered from use, but just as well the services themselves, in order to present advertisements, thus intersecting a synoptic gaze with non-professional camera use.

I have connected these insights presented with my own empirical work on non-professional uses of networked cameras, and focused on the ways in which the specific material mediation of networked cameras affects their use. As suggested in the beginning, the added value of an empirical approach is that we are able to begin unpacking assumptions regarding the visualization of social processes and the expansion of the representational space, which are often narrowed into specific visual orders, such as represented by the panopticon and the synopticon (cf. Ginsburg, Abu-Lughod, and Larkin, 2002). Empirical studies of how people actually use media reveal surprising and
sometimes contradictory findings on how digitally networked cameras are used. These uses do not, by any means, displace asymmetrical visual orders; instead, they complement them, at times in surprising ways.

The empirical work leads us to the question how networked cameras are actually used? Due to the huge amount of cameras and camera pictures available, I have chosen to follow a heuristic method and studied the question regarding camera use in four case studies. The first case study focuses on the ways people in Finland, interested in novel picturing technology, use it as part of their everyday life. The second case study looks closer at the relations that people in Finland using photo-sharing sites take towards the camera pictures shared, how they deal with questions of privacy. A third case study, still in Finland, looks closer at the use of networked cameras in a relatively novel setting, a kindergarten, and explores how different stakeholders use the cameras. Since the first three case studies focus on mainly private or semi-private settings, in which usually the people using cameras, interacting with others, know each other in advance, a last case study focuses, this time in Germany, explicitly on a public use of networked cameras in order to raise attention to societal issues deemed of importance. The people of interest here focus especially on advertising imagery, creating their own images that contest, or change the initial intentions in these images in effigy. In the actions discussed, the images created are usually tried to get into mass mediation, as to raise wide public awareness.

The empirical examples show that camera use in the networked “cam era” is organized into meaningful pictorial practices, which, in turn, are influenced by both social conventions and material mediations, as suggested with Belting’s focus on an interrelation between image, body, and medium. Existing ways of using camera pictures are still important, but also, as shown cameras enter more and more novel settings.

Focusing both on social conventions and on material mediations helps to show that both play an important part in how pictures are actually used. For example, the kindergarten example shows that giving networked camera-phones to children and enabling them to take pictures and share them instantly is a technical solution that has power implications in existing social relations. The examples presented as interventionist tactics again show how specific actors have learned to navigate by sophisticated means in a “cam era” in order to contest some of its aspects, and here technical solutions are less important for uttering criticism than are the social conventions structuring societal
image use in the first place. The examples also show that such antagonistic tactics contest existing legal regulations regarding appropriate visual communication. Using pictorial advertising material to make one’s point is just one example of means of communication whose use is heavily restricted. Immaterial property rights, as represented by trademarks, logos, colors, and words used in pictorial communication, restrict partial balancing of asymmetries in communication relations.

Since my empirical observations as well as recent theories stressing the importance of material mediations suggest that non-human actors should receive dedicated attention, I have focused on looking closer at the ways in which this happens.

I suggest that the medium-specificity can be approached via the notion of affordances, which assists in explaining why some things serve as media for specific techniques while others do not. Showing which affordances matter, and which are activated as part of practices is an empirical question and can not be decided without knowing how networked cameras are actually used.

The examples provided suggest that in some cases the affordances of material mediations are of special importance in networked camera use. Affordances of material artifacts make non-professional camera use possible. What makes listing the important affordances difficult is that they are always relational; the hybrid camera in a heterogeneous network with its specific business models and embodied practices is different for each participant. Additionally, affordances tend to be invisible and are taken for granted – only if something does not work do they become visible (for example, they are seen when an end user is unable to share his photos with a communication network because of missing “plug-ins” such as a USB or GPRS connection). Although affordances make picture use possible, they are not the background for foreground activities. Affordances mediate the ways in which specific picturing practices and gazes are lived out, the ways in which bodies connect to media.

Based on the empirical findings, I suggest three major affordances that are activated in the empirical pictorial practices. First, the camera device itself affords its use as part of specific social practices. Networked cameras are today increasingly small and easy-to-use, and are thus used to focus mutual attention in a wide variety of social situations. The pointing gesture, when positioning a camera in front of one’s face in a social situation, is one example that often activates those to be depicted to prepare their depiction in effigy by taking specific postures \textit{in corpore}. The translation of images \textit{in
*corpore* into images in effigy is done with particular material mediations in mind. In using a camera, the indexicality that the *camera obscura* in networked cameras provides for, is activated in a wide variety of these practices, such as when distributing one’s self into photos that are shared via photo-sharing sites. The use practices of networked cameras are constrained by their degree of openness for various uses. Especially closed designs at times afford the use of a specific networked camera system only for very restricted purposes, whereas rather open devices, such as mobile camera phones, are used for a wide variety of purposes. The designed intentionality is always complemented by undesigned effects, when material mediations, or use innovativeness, “strike back,” countering intended uses.

Second, networked cameras connectivity provides for using cameras in order to bridge the kinds of spatiotemporal constraints that we have without them (such as being unable to be at two different places at the same time). Sharing photos and videos of everyday life as it happens, making them accessible in real time for others to see, facilitates a specific social organization that helps us to be at the same time in various places in effigy. We can increasingly decide where to be *in corpore*, while upholding a connection to other people and places elsewhere in effigy. This is, as argued, one of the techniques that enables our lives in surmodernity, in which our references are individualized, and distributed spatiotemporally. The networked camera device is here of importance. But taking a closer look on the actual material mediations in “doing” networked connectivity suggests that these connections are empirically much messier than we might first think of. The camera networks people use in order to connect are heterogeneous that need often a lot of infrawork in order to be used and maintained. Designers of networked camera systems try to answer this messiness with automating specific tasks that have to be done manually. While this at times might solve some of the issues related to infrawork, it often creates its own specific problems.

Third, the convergence provided by networked cameras provides for increasing variety in possible uses of networked cameras. The desires for techniques, worked out as examples of how specific techniques get artifactual form, are only a starting point. The empirical examples show a wide variety of additional ways that we use cameras for, and networked camera development provides us continuously with novel uses of networked cameras, such as barcode scanning. We find that there are ever more sources explicitly or implicitly teaching how to take pictures of various kinds, and we see an increase both
in individualized access to cameras (due to cameras being embedded in so many devices) and in the accepted forms of representation. We also see the distribution of images to various social spheres, complementing the rise of various public spheres. Here specific kinds of camera use, as shown with interventionist techniques, differ significantly from other in the intended audiences. In order to gain attention from professionals in mass media, interventionists use very different kinds of techniques of the body than do teachers in kindergarten when depicting those they rear for. The actual pictorial practices take many forms, and the empirical examples discussed are only a small slice of the landscape of various pictorial uses seen today.

Going through the empirical examples and looking at the affordances provided, I argue, drawing from Belting’s anthropology of images, that in quite a few cases symbolic activities have major agency in forming the ways in which people relate to each other via networked cameras. But the media that bodies use in order to form images are an integral part of actions such as non-professional picture use. They not only provide a surface on which symbolic activities may take place but are an integral part of doing photography.

The empirical findings and the conclusions drawn from them in this study are limited in their scope. The studies have been done mainly in Finland and Germany, with people who belong more or less to a societal middle-class. The conclusions I draw regarding affordances and the ways they are activated in pictorial practices studied empirically draw from these case studies, and are not generalizable to all situations in which networked cameras are in use, although I do believe that the conclusions drawn can be found in various other case studies as well. As my focus has been on non-professional uses of networked cameras, also the various professional uses, such as using cameras for surveillance, television broadcasting, or teleconferencing at work are left out of this study. The networked “camera” provides various opportunities for future research.

Having studied how networked cameras are used non-professionally, and how these cameras mediate our actions, I only want to point to one topic of many that explicitly comes to the fore for future research: How do designers of networked cameras relate to the cameras they design and the pictures taken with them? Do the answers bear many similarities to the findings provided in this study? What kinds of forms do they see
networked camera use to take in the near future? What kind of desires for techniques do they have? How come?

This kind of research would be of special interest. Taking into account that the “cam era” is scaling up, the uses of networked camera technologies will grow. Privacy-related issues, immaterial property rights, questions of symmetrical communication relations, and image ethics will be addressed in one form or the other by camera designers, legislators, social scientists, and those participating in the use of these technologies. Hopefully this will happen also in shared venues.

Keeping the asymmetrical visual orders discussed in mind, we need to work on the construction of networked cameras in which synoptic and panoptic principles do not intersect too heavily with other kinds of camera uses, overshadowing the possibilities that these techniques enable for us. At their best, digitally networked cameras enhance our embodied capabilities, extend our motor and sensory organs, and direct useful sensory information into the body, thus becoming momentarily part of us. The benefits of seeing and interacting with others with the aid of cameras should outweigh the disadvantages if we are to live in a digitally networked “cam era.”
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