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## The camera as a meeting place for decision making

Asko Lehmuskallio

The camera is usually thought of as a particular kind of photographic device, which has remained pretty much the same for most of the twentieth century. I want to problematize that understanding by suggesting an understanding of the camera as a meeting place for decision making, which may take various forms, including a possible broad range of human and non-human actors. In discussing early photographic portraits, Galton's use of generic images, and the expanding role today taken by automated collection and processing of optical images in decision making, I suggest focusing on the role of the camera in specific epistemological settings. Of interest here is how cameras play a pivotal role in image making, but both the role they play, as well as the images created, differ significantly based on the kinds of settings and image practices studied. The cameras, in each respective case, serve as focusing media for photographic practices.

### Introduction

It has been suggested that, before the development of photography as we know it today, technologies for receiving optical images (such as the camera obscura), as well as technologies for sending images (e.g. magic lanterns) were well known. What was missing was a way to store images in a way that they could be "*transmitted* across space and time and then *sent again* to another point in space and time" (Kittler 2010: 118, emphasis added). In this context, that "missing link" has been associated explicitly with the camera: "The camera obscura receives images; the magic lantern sends them; the camera stores them" (Peters 2010: 12).

The notion of the camera as a mechanism for storing images and transmitting them across space and time was concretized quite early in the history of photography, in ways whose success demanded particular sets of skills. While enskilment for working with the optical devices, chemical processes, and varied lighting conditions was complex already, it was complicated still further through resistance by our everyday material world and the bodies within it. Early photographic processes were far from straightforward, and needed specific attention for preparing, taking and processing images. Photographers needed to learn how to use the materials for photography, and those to be photographed had to find ways of being depicted in acceptable ways. If photography was to become a viable technology, it not only

had to be perfected as to work reliably as intended, but just as much needed to rely on various social actors' willingness to grow accustomed to cameras and their use for photography. Hence, photography both needed our material world to be formed in specific ways and required bodies that had learned attachment and attunement to photography in its many forms and facets.

The following discussion focuses on this mutual attunement work between situated bodies and changing photographic technologies, in order to reveal variations in cameras' vitally important role within this interrelation. Cameras operate as media that demand a specific kind of care and attention if we are to be able to engage in practices of photography. I draw examples for the kinds of care and attention needed from the context of cameras' use for portraiture, social sorting, and automation, since these are of particular relevance for today's widespread implementation of photographic technologies in our day-to-day life. The examples presented lay bare some of the articulation work needed behind taking a photograph – the kind of “work that gets things back ‘on track’ in the face of the unexpected, and modifies action to accommodate unanticipated contingencies” (Star and Strauss 1999: 10). The examples hence constitute underpinnings for a practice-theory-oriented analysis of visual material (cf. Lehmuskallio and Gómez Cruz 2016), since they reveal some of the work that tends to remain hidden when the emphasis rests mainly on visual characteristics of images.

First, I will discuss the notion of focusing media, helping us to pay attention to how cameras may influence what we perceive to be of relevance. Then, I will discuss camera portraits and pictorial statistics as two kinds of photographic settings that rely on different notions of the camera. Since these two settings tend to be increasingly combined within malleable digital settings, I will pay particular attention to algorithms, automation, and their particular mode as operative images, before arguing that understanding the camera as a meeting place for decision making allows us to shift attention from the camera as a particular kind of device to its use in specific epistemological settings.

## Focusing media

Scholars of visual practices have stressed the role of an education and training in seeing for gaining ability to orient oneself well in one's immediate environment (Grasseni 2004; Ingold 2011; Pink 2015). Seeing appropriately necessitates particular sets of skills, which we gain

painstakingly while working against the resistances of the everyday. This enskilment constitutes, first and foremost, attunement between the perceptual system of a specific actor and the kinds of situated environments said actor has learned to act in. The specific skills learned can be applied habitually, as a particular proficiency of the body, as knowledge in use, and/or as an ability to follow signs. Alfred Schütz and Thomas Luckmann (2017: 157–162) have called these proficiency (*Fertigkeit*), knowledge in use (*Gebrauchswissen*), and formulaic knowledge (*Rezeptwissen*), pointing out the different kinds of ways in which we learn to “solve” problems of the everyday without needing to pay additional attention to how to act in a specific situation. They exemplify this by maintaining being able to walk, whistle a tune, and think through a mathematical problem at the same time, because both walking and whistling have become for them habitual. But in order to walk and whistle, they have needed to learn both in a process, which the anthropologist Tim Ingold has called enskilment, “conceived as the embodiment of capacities of awareness and response by environmentally situated agents” (2002: 5).

These skills become useful for practical purposes and are employed for specific kinds of practices within our material environments. Discussing how hunters have learned to attune themselves to specific environments, Ingold has suggested that

the perceptual system of the hunter is attuned to picking up information, critical to the practical conduct of his hunting, to which the unskilled observer simply fails to attend. That information is not in the mind but in the world, and its significance lies in the *relational context* of the hunter’s *engagement* with the constituents of that world.

(Ingold 2002: 55, emphasis added)

A person using photographic technologies, rather than a spear or arrows, does something similar, which is based on the skills learned in doing so (Forrest 2016). Photographic technologies are usually not used for their own sake but as a means of, for example, obtaining a photo for a passport to enable travel to another country, or for being able to identify and verify speeding in traffic so that the perpetrator will not choose to exceed speed limits later. The particular cameras used for creating photographic images are used to guide attention and perceptual attunement within specific practices. They act as focusing media, not to be understood mainly in a physical sense, but especially as a way of guiding epistemological interests in the here and now.

Within specific settings, we pay particular attention to only some media, as not all of them are of equal importance for the tasks-at-hand. As Grasseni and Gieser (2019: 10) point out, focusing media “are so central that much of the learning and enskilmnt processes revolve around them. It is with them that the powers of reconfiguration and transformation become most apparent.” The act of photography includes a range of artifacts that we use for taking images, but of particular concern is the camera, especially as it has become embedded into a variety of devices, used for very different kinds of purposes. It is precisely this reconfiguration and transformation of the camera as a focusing medium that I examine below.

### The first camera portraits

In 1840, it took six minutes of exposure time by John William Draper and careful preparation of his sister’s face for creation of what the Eastman Kodak Company presented in an advertisement from 1919 as “the first camera portrait” (see Figure 2.1). The text of the advertisement tells us of the practical arrangements necessary: “To insure the best possible lighting, Professor Draper’s sister chalked her face and in the glaring sunshine posed for him on the roof of the old University of the City of New York in Washington Square.”



*A photograph made in 1840, of Miss Dorothy Catherine Draper, by her brother, Professor John William Draper, M.D., L.L.D. Now in the collection of Sir William John Herschel.*



### *The First Portrait Photograph*

In 1827, J. N. Niépce exhibited to the Royal Society photographs of still objects, which he had succeeded, after years of effort, in making with six-hour exposures. Twelve years later Daguerre had reduced the timing of landscape pictures to half an hour. But in 1840 an American, Professor John William Draper, made the first camera portrait in the remarkable time of six minutes. To insure the best possible lighting, Professor Draper's sister chalked her face and in the glaring sunshine posed for him on the roof of the old University of the City of New York in Washington Square.

No one "poses" six minutes today, or six seconds. Speed of mechanism and sensitiveness of plate and film have freed photography from its old-time handicaps. The newer portraiture depicts true personality, because the camera's action is swifter than the subtle changes of facial expression, and the photographer catches, in the flick of a silent shutter, even the play of a passing mood which pleases or disturbs.

Thus photography, through nearly a century of tireless research, has traveled far along the road to perfection, in portraiture as well as in other fields of achievement. And during the last thirty years, the Eastman Kodak Company, with an increasing sense of service, has brought to light in its great laboratories many of the inventions and processes most vital to photography's usefulness.

**EASTMAN KODAK COMPANY**



Figure 2.1 Kodak advertisement, 1919. Source: Duke University, Rubenstein Library

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These requirements for exposing a portrait photograph are telling – they speak to the careful orchestration needed for this endeavor. In a schematic drawing adjacent to the photo reproduced (see Figure 2.2), the professor is shown standing behind the camera, leaning slightly forward. The camera sits on a table, and a box with bottles is on the right-hand side, with the professor holding one bottle in his right hand. The subject, his sister, poses in front of a mounted backdrop, which was clearly prepared in advance, and, as we have been made aware, she not only holds a pose but has also applied chalk to her face for the best possible result.



Figure 2.2 Schematic drawing, detail of Kodak advertisement, 1919. Source: Duke University, Rubenstein Library

For Draper to craft a portrait photograph of his sister, he needed exceptional conditions. Blazing sunlight, a white enough surface, a mobile *camera obscura* that could be kept perfectly still at a suitable height, and the necessary chemicals readily at hand, along with all the requisite knowledge and skills for using these – in the correct manner, in the right order, and with the correct timing for each. An additional requirement was that his sister, acting as the model for the “camera portrait,” had learned and perfected standing still, without moving her head, for the entire duration of exposure. She also needed to allow her face to be chalked white, without protesting this masquerade. To be depicted at all, she had to act and behave in very medium-specific ways.

The camera as a focusing medium called for Draper to attune himself to a variety of artifacts and devices, which needed to be handled with care, such that an image of a human body could be transferred to another medium by optical and chemical means. Here, the wooden box, usually identified as a camera, is only one part of an extensive assemblage of skills, bodies, items, and environmental conditions necessary for performing photography.

Portrait photographs, such as those produced by Draper, have been informed by a vast range of other visual practices, among them painted portraits, silhouettes, and death masks, along with emerging interest in such practices as physiognomy and anthropometry. Draper's sister was depicted as a single person, in gendered garments reflecting, or idealizing, her social position relative to all others whose portraits had been – or could be – created. The image of her face became emblematic of the potential for photography to depict human beings in ways that would later allow practices of pictorial self-representation to become widely distributed among people representing a broad spectrum of social backgrounds.

## Pictorial Statistics

While Draper's skills were certainly a *mélange* of proficiencies of the body, knowledge in use and an ability to follow instructions set out by others, photography became quickly, and early on, entwined with various kinds of suggestions and experimentation related to how one might best carry out photography.

The guidelines and their presentation differed greatly with the kinds of interests and motivations associated with photography. In a contrast against embodied, lived experience in here-and-now conditions, photographic cameras afforded "time axis manipulation" (Krämer 2006), a sort of slice, or cutting, from the mediated everyday. The act of photographically cutting was, again, premised on the ways in which cameras and their possible uses were understood. As Sarah Kember and Joanna Zylinska have suggested, photography may be understood "as an active practice of cutting through the flow of mediation, where the cut operates on a number of levels: perceptive, material, technical, and conceptual" (Kember and Zylinska 2012: 71).

For example, Francis Galton posited that photography allowed him to see beyond single instances and to reveal "types" that remained invisible to the technically unaided eye. His interest in photography had less to do with the immediately visible than with hidden features that he believed could be rendered visible via technical images. Galton, an important figure



in the development of statistics, forensics, and eugenics, suggested that his composite photographs created from several separate portraits gave visualization to what he called pictorial statistics, “suitable to give us generic pictures of man, such as Quetelet obtained in outline by the ordinary numerical methods of statistics, as described in his work on *Anthropométrie*” (Galton 1879: 162).

The composite portraits he created were considered to render visible a novel scientific method of creating both research data (the specimen) and a visualization thereof. Galton continues thus on the same page: “By the process of composites we obtain a picture and not a mere outline. It is blurred, something like a damp sketch, and the breadth of the blur measures the variability of individuals from the central typical form.”

For Galton, these composite portraits were “the pictorial equivalents of those elaborate statistical tables out of which averages are deduced” in that they, on one hand, retain all the features of those portrayed individually while, on the other, demonstrating – when the subjects more frequently belong to the same “typical group” – more “medium characteristics [...] than divergent ones” (1879: 163).

Galton held that the visualization itself showed whether the data sampling was correct, as “medium characteristics” become visible while single outliers do not. The medium characteristics thus were claimed to show statistical abstractions in photographic form, providing a novel way to visualize information hitherto accessible only numerically. At the same time, being the Achilles heel of the method, the technical image revealed for Galton the correct composition of types in visual form.

In a characterization by Josh Ellenbogen (2012), in Galton’s generic images the “correct” blurriness of the depicted face became a guarantee of authenticity, if it reflected the assigned probability distribution. While the rules Galton laid down for conducting composite photography yield a guided method for creating these visualizations, their “correctness” was derived from methods developed in statistics and mathematics.

In Galtonian photography, blur also signified that every part of the face had been registered, even though it might not be measured or have been assigned a name. Thus, the composite photographs depicted and visualized statistical averages even for facial features that have not been assessed numerically (cf. Ellenbogen 2012: 169). In addition, “Victorian commentators treated blur as a vehicle for ideal content in photography” (Ellenbogen 2012: 135), which pointed to a position of Galton’s blurred “portraits of the invisible” within a broader visual

discourse of the time. Blur was a diagnostic criterion for showing that one's work involved not merely copying the seen but actively rendering it in accordance with a specific set of principles identified earlier as proper. This identification of the role of blur for assessing visualizations was interested in specific visual means for generating knowledge, which in earlier forms of portraiture had not been given a scientific mark.

By looking closely at the actual images from Galton's nineteenth-century statistical photography, we can see how these composite portraits were accorded a mark of scientific authority, derived partly from his "how-to" specifications for pictorial statistics and partly from visual styles prevalent at that time. In summary, the technique he articulated was used to produce "real and true portraits" that relied on traits visible in photographs of faces. The composites were made with an intention to portray "the social" in a particular rendering of the face that was understood as a photographic aggregate of its components.

While this kind of technologically mediated and, thereby, naturalized social sorting has since been called clearly into question and problematized, composite portraits continue to be created regularly, for numerous purposes, whether to "show" the "New Face of America," in attempting to identify criminals by means of photographic portraits, or for striving to assess features such as the assumed sexual orientation of those depicted. Novel uses of composites continue on the path paved by Galton's early work, and many bear striking visual similarities to their historical antecedents, which tend to remain not discussed.

## Algorithmic photography and automation

While the first photographic portraits, such as that by Draper, were choreographed to enforce parallels with images familiar from other visual media, such as painted portraits, Galton's pictorial statistics brought new media to bear for exploring old ideas in visual form. In marked contrast to Draper, Galton had to argue for his novel form's correctness, which was not immediately evident from the resulting image's visual references to antecedents. In doing so, he directed and "educated" the attention of those creating or exposed to such images, specifying precisely how the photographic process should unfold for creating the visualizations. These specifications were centered on the camera, especially how it should be used for taking photographs.

By explicitly specifying the necessary steps for creating generic images, Galton articulated an algorithm for image production – i.e., a "concise description of a finite set of actions leading

to the solution of a problem” (Toister 2020: 183). Only after learning this description can the photographer “do” this kind of photography successfully.

With computers involved in capturing, processing, displaying, and storing countless images today, algorithms abound. While much of the literature on digital photography suggests that algorithmic photography is relatively new to the scene, a broader understanding of algorithms – one not tied to electronic computing technologies – can aid greatly in teasing out the roles that cameras play in photography, in its various forms and expressions. As Yanai Toister reminds us, the word itself is derived from the name of a ninth-century mathematician called al-Khwarizmi and thus connects with techniques having little to do with computers, as we know them today. The concept refers to a procedure or set of rules, with the Oxford English Dictionary (OED) indicating that it later began denoting “a precisely defined set of [...] operations for the performance of a particular task.”

To complete these sets of operations as delineated, one needs skills, which may entail a proficiency of the body, knowledge in use, and/or abilities to follow signs. Importantly, as has been discussed in connection with the notion of skilled vision, while these proficiencies are largely embodied and shared in face-to-face social situations, they are also inscribed in devices that “codify the correct expression, direct the perception and represent standards of ‘good form’” (Grasseni 2004: 44).

Accordingly, these objects afford particular kinds of uses, which may be explicitly inscribed within them. In combination, cameras and specific algorithmic constraints to using them constitute an assemblage for carrying out photography as designed. Galton’s generic images are examples just as worthy as Marey’s chronophotography, used for physiological analysis of movement, or Bertillon’s *portrait parlé*, an anthropometric method for describing a person’s physical characteristics, used for purposes of identification. While these all include clear instructions, and hence algorithms for their use, only some parts of the photographic processes themselves are actually automated.

Though automation relies on algorithms, algorithmic photography should not be confused with automation. Algorithmic photography, where it is most clearly rule-bound, follows specific instructions for the creation of photographs. As discussed in the context of Draper and Galton, the actual image logics may vary greatly, such that one set of instructions leads to the refinement of particular kinds of tasks, or desires of the body, whereas other sets lead to very different paths. Therefore, it makes little sense to conflate all types of photography –

their specific situated uses differ considerably from each other. This is why we should speak not of photography but of photographies, just as the plural “cameras” acknowledges and affords discussing numerous categories, constellations, and uses.

Various authors warn that, instead of humans being the users of the technologies around them, things might be the other way around. For instance, Marshall McLuhan has suggested that “by continuously embracing technologies, we relate ourselves to them as servomechanisms. That is why we must, to use them at all, serve these objects, these extensions of ourselves, as gods or minor religions. An Indian is the servo-mechanism of his canoe, as the cowboy of his horse, or the executive of his clock” (McLuhan 1994: 46).

While media anthropologists, studying actual uses of technologies, report on a great variety in camera use (see Ginsburg et al. 2002; Gómez Cruz and Lehmuskallio 2016; Pinney 1997), tales of “us natives” being captured by algorithmic photography are alluring. These resonate with a long-held fear of images, narrated at least since Plato’s cave, an allegory in which men held in a cave can only see shadows, and assume they would show reality. This fear is all the more true in the realm of digital environments, which allow for novel recombinations in photo use, and facilitate automating complex processes, via chains of long and varied algorithmic steps. While photographs’ inherent mutability and recombability in this domain is discussed under concepts such as the softimage (Hoelzl and Marie 2015), it is particularly image automation that strikes concern, and at times fear, into human hearts. That is because automation tends to *limit* variation in use. Material in a heretofore-flexible environment is made subject to theoretically mutable sets of algorithmic processes fixed on specific, particular uses.

## Operative images

Perhaps most famously, automation of this sort is discussed in relation to “operative images,” a term introduced by Harun Farocki to point to the expanding role taken by automated collection and processing of optical images in decision making. He pointed to cameras’ increasing use to record images, which serve as input to computer programs that look for specific patterns in the recorded data and, in response to the patterns found, provide the information necessary for executing predefined commands.

For Farocki (2004: 17), operative images are “images that do not represent an object, but rather are part of an operation.” Among the examples he cites are cruise missiles from the

1980s, referred to at the time as smart weapons and used in the 1991 Gulf War, and a somewhat earlier case, involving a 1942 training flight of a missile in Germany that had a warhead equipped with a television camera for determining when to fire the missile. These examples illustrate how operative images may, on one hand, aid in decision making (e.g., “Where is the target?” or “Should we fire?”) or, on the other, rely on algorithmic processes that are partially, if not fully, automated.

Trevor Paglen (2019) has pointed out that operative images now prevail on scale orders of magnitude greater than at the time they were initially discussed. Of particular concern for him is that these images are part of machines that affect the world and, in consequence of the images’ central role, display inescapable real-world consequences. At the same time, however, more traditional characteristics of images are not on display – there is no presentation via visual media, for example on screens or monitors. Operative images usually remain invisible to humans except when they are specifically rendered visible for purposes of education, news, or art.

This tension between invisibility and real-world consequences on a vast, global scale is specific to Farocki’s and Paglen’s discussion of operative images. They focus on process automation, based on optical images recorded with cameras, and processed with algorithms that provide concise instructions in order solve specific tasks. In these cases, there is little for human operators to see, and their expertise is needed only for maintenance, once something breaks or does not function as planned.

While Farocki and Paglen stress the invisibility of operative images to human participants, Jens Eder and Charlotte Klöckl note how images themselves are the *agens et movens* in the unfolding of particular events. Images augment, create, verify, and direct how specific events become a matter of concern, which is why Eder and Klöckl recommend emphasis on the importance of image operations. These have grown particularly evident in political conflicts, as “[t]he persons represented or addressed are to be affected in vital ways; their bodies or behaviours are to be changed” (Eder and Klöckl 2006: 4).

For both operative images and image-based operations, specific modes of automating and expediting play an important role in effectiveness and political volatility alike. This is no longer a world of slow, reflexive decisions on how to “do photography” with which Draper was concerned with; but in these cases, images follow pre-assigned paths, and human decisions may be limited to quick reactions “after the fact.” Operative images are thus not just part of

operations, but part of faster, accelerated, and automated processes of decision making. Of particular concern, for both images and operations, is the notion of the camera, to which I will now turn my attention.

## The camera in focus

I have suggested that, if one is to disentangle some of the variance and variety in photography, it is useful to consider the attunement between human bodies and photographic devices. Within this interrelation, the camera plays an integral role, reconfiguring and transforming how bodies and devices intra-act and interact. If the camera indeed is a focusing medium, which plays its part in how we detect, recognize, and socially sort one another, a focus on the forms and uses of photographs shows important variation in how the camera stores images in such a manner that these can indeed be, again, transmitted across space and time, then sent on to another point in space and time.

The etymology of the word camera assists us in disentangling the everyday roles played by cameras, and how they may be considered to have agency. As the cases of Draper's portrait, Galton's composite images, and operative images and image operations demonstrate, the camera as a device for taking photographs is only one part of a much larger whole, and a part whose role changes in use. Draper needed to choreograph the photographic act *in situ*, holding and using the variety of photographic devices at hand, while Galton used preexisting images (photos already taken, developed, and printed) as a source for his generic images, thereby exercising greater control of how the claimed invisible qualities were made visible. In the case of operative images, the camera is a fully automated black box that is utilized to capture and analyze optical images, then execute pre-assigned commands on the basis of the analysis results. Only the notion of image operations does not rely on a relatively fixed understanding of the kind of photographic camera used, since it has more to do with the kinds of practices and processes within which images make a difference.

Interestingly, when going through OED's definition of "camera," it is only when one reaches item 4b that one finds the "device for taking photographs" sense, referring to a general understanding of cameras that often remains unquestioned in discussions of photography. In contrast – and fitting quite well with my suggestion of considering the camera as a crucial focusing medium for photography – meanings higher in the list include the specific setting "The department of the papal Curia dealing with finance" and, after that, the more general

definition “A chamber in which a deliberative, judicial, or legislative body meets.” Accordingly, in addressing the diverse sets of uses within which photographic devices are situated and how they are momentarily assembled jointly, the camera as a focusing medium is most usefully understood precisely as a kind of setting that is used for purposes of deciding upon elemental aspects of the everyday: Who is allowed to enter, and who is not? Who will be questioned further, and who may pass immediately? Last but by no means least, on what matters is our focus of attention set – to what are we attuned?

## Conclusions

Contemplating the camera as a focusing medium helps us pay attention to the particular ways in which the process wherein photographs are taken, processed, and rendered visible influences the images we get to see. Many scholars, as Amy Cox Hall notes in the introduction to this volume, have taken little interest in the ways in which a “camera influences and shapes precisely what is constituted in its form,” even though the history of photography exhibits an astonishing variety of images, devices, and kinds of uses. Özge Calafato shows the part that a wooden box, a tripod, and a cloth have played in constituting *alaminüt* photography and its role in the narrative of Turkey’s modernity, while Lisa Cartwright and Andy Rice focus on the importance of a viewfinder’s absence for understanding how photographic images may become part of embodied action. Meanwhile, Jessica Chapman, focusing on body-worn video, discusses fantasies of recording, from a particular viewpoint, everything that happens around us, alongside the technical shortcomings in relation to these dreams. Uschi Klein and Sergio Minniti too pay attention to the particular roles that bodies play in camera use, reminding us of the importance of attending not just to technical specifications, precisely defined sets of operations, or relational affordances, but also to how these affordances are activated within specific symbolization practices.

Here, I have tried to add to these discussions by suggesting a broader understanding of a camera as “a chamber in which a deliberative, judicial, or legislative body meets.” With the camera understood as a meeting place for decision making, it becomes clear that some of the decisions made within these chambers may have been delegated to technical artifacts, prescribed to work according to defined sets of operations, and automated in ways that a human operator is only at times needed in the loop. When understood in this way, the camera even in the driest empirical settings is revealed to be much messier than neat models and

formalizations may imply, and its effectiveness may be renegotiated, questioned, or – as often happens – taken at face value. But most importantly, if cameras are to act, they must be taken care of and worked for. And they must be believed to produce useful results. Otherwise, why would we invest such vast amounts of energy, effort, and time for them to produce images among us?

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