# PHOTOGRAPHY

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## Love's labour's lost

*Disturbingly, one important constituent within the photographic habitus has remained conspicuously absent from most discussions in what has come to be called Post-Photography. This particular, which since the nineteenth century has routinely been considered a key stage in the photographic workflow, is the human photographer. Therefore, this article delineates the presence of the human photographer in photography, its first appearances, its rise to prominence and its subsequent fall. In doing so, it attempts to explain how we taught ourselves to think of photography as a human-centric form of art-making and whether we ought to continue thinking of it as such. It begins with historical accounts of photography's "machinism", it then discusses modernist accounts of photography as an act of artistic ingenuity, followed by several modalities that have recently become available through digital and networked technologies. The article concludes with an alternate account of photography today and the likely place of both human photographer and viewer within it in the foreseeable future.*

## Introduction

It is nowadays consensual to regard the ubiquity of photographic images with either fear or remorse. It is less common to note the rarity of traditional photographic artefacts. Photography today is quite literally nowhere and everywhere simultaneously. However, such a paradoxical state of affairs, I argue, is not without precedent in the history of photography. For in its relatively short lifecycle the medium has time and again challenged ideas of labour, originality and value. In doing so it has regularly defied prevailing definitions of creativity, oftentimes enfeebling them, other times rendering them unfit for the task of articulating artisthood.

But photography today is a changed art form. Partly because it is no longer an autonomous medium, it is certainly not a distinct one. In fact, photography is arguably better served if understood as media. Indeed, photography's "symbolic apparitions" are, as Daniel Palmer gracefully argues, "endlessly animated across the cultural field".[1] But what precisely are those "apparitions" one should ask? As before, these include various seemingly familiar devices and semi-tangible processes. They also include a plethora of other ephemeral components. Of those, some are "hard" (that is to say technical) and others are "soft" (or habitual). They are what I call "pseudo-photographic" devices and processes. These yield images that are usually considered photographic despite stark differences from most artefacts in the history of photography. In fact, these could be understood as "quasi-photographic", as I have elsewhere designated them.[2] Such images now appear frequently in many stimulating discussions within the theory and philosophy of photography, as well as in new media philosophy.

Disturbingly, one important constituent within the photographic habitus has remained conspicuously absent from most discussions in what has come to be called Post-Photography[3] and more recently Post-Post-Photography.[4] This particular, which since the nineteenth century has routinely been considered a key stage in the photographic workflow, is the human photographer. Importantly, this article follows Joanna Zylinska's definition for human as "being endowed with a set of traits such as reflexivity, purposefulness and language; traits that — even if not *uniquely* human — do translate into a set of historically specific practices such as storytelling, philosophizing and image-making".[5]

Therefore, this article delineates the presence of the human photographer in photography, its first appearances, its rise to prominence and its subsequent fall. In doing so, it attempts to explain how we taught ourselves to think of photography as a human-centric form of art-making and whether we ought to continue thinking of it as such. I begin with historical accounts of photography's "machinism", I then discuss modernist accounts of photography as an act of artistic ingenuity, followed by several ideas that have recently become available through digital and networked technologies. I conclude with an alternate account of photography today and the likely place of both human photographer and viewer within it in the foreseeable future. In other words, this article, unlike Zylinska's, is not about the eventual disappearance of the human species (as postulated by some) but rather about the historical and theoretical definitions of human agency in the production of photography, as well as about the current, exponentially increasing, disappearance of human involvement from the habitats wherein photographic images are currently being produced and consumed.

## A history

From its outset in the mid-nineteenth century, advocates and assailants of photography felt compelled to propound an idea which has since become a recurring theme in the discourse of photography — namely that its technology requires little time and almost no skill. William Henry Fox Talbot, to name but one prominent figure, argued that "You" (presumably speaking in single *and* plural forms and referring to himself as well as to other frustrated draftsmen who could become camera operators) "make the powers of nature work for you, and no wonder that your work is well and quickly done".[6] And quite early in its history the work was indeed done "well" by photography, as photographs from the 1840s (and in some cases from the late 1830s) *were* clear depictions of recognizable scenes, as their creators in fact wanted them to be. "Quickly done", on the other hand, was a different matter altogether. In fact, early exposure times were quite long, achingly long by today's standards, and in many cases even longer than the time it took to draw a depiction of the same scene.[7]

The idea of spontaneity, in consequence, helped promote another contestable notion — that photography was a relatively democratic platform — equally accessible to both archaeologist and artist alike and of much potential to both.[8] Notwithstanding, these qualities were in some contexts viewed as a virtue, and in others a vice — always depending on the intensity of one's opinions about authorship and, particularly, artistic authorship.

Proto-photographers[9] who wanted to celebrate the "miraculous" possibilities of nature spontaneously "reproducing herself"[10] deliberately downplayed the human effort required to bring a photograph into being. Crucially, within what was soon to become an elaborate fantasy of autogenesis, it was photography's supposedly "natural" qualities that rendered it objective by default and hence intrinsically different from previous traditions of image-making. Even Eadweard Muybridge's famous animal locomotion photographs did little to rock the stability of this belief. Shorter exposure times were historically followed by mobile (or more mobile) cameras and studios. This made a greater variety of scenes and situations potentially portrayable, which in turn increased and diversified the repertoire of photographic depictions. Nonetheless, in viewers' minds photography, which was previously identified with nature, now vied with the machine instead. Viewers of photographs would look at the earliest works in a different way, one that simply placed the concept of "machine" alongside "nature", or as interchangeable with it, as *the* picture-maker in photography. The mechanical objectivity of the camera was thus recognized as simply a further asset in the desire to repress the wilful interference of the human hand (or mind). It should be noted that even today, in many contexts outside of art (and occasionally within it), the supposed suppression of human intervention continues to give photography more than an iota of authority.

However, with the increasing awareness of photography's power to satisfy society's age-old appetite for depiction, photography gradually expanded into more and more realms of culture and commerce. And so, with the growing demand for photographs made by trained professionals, a disturbing worry crept into the minds of both photographers and viewers: if it is only nature or machine that creates photographs, what, if any, is the difference between one photographer and the next? A humanly laboured work, it was assumed then, is imbued with something of the human soul, but a nature- or machine-produced work is another being altogether. This, for example, is what Charles Baudelaire stated then: "But if once it [photography] be allowed to impinge on the sphere of the intangible and the imaginary, on anything that has value solely because man adds something to it from his soul, then woe betide us!"[11] Put differently, a (machine-produced) "soulless" work cannot be treated as an artwork and thus should never be permitted into the realms of art. Naturally, this meant that such a work could not be traded as an artefact, or protected as such. Therefore, to serve a growing bourgeois customer-base, to profit from it in one way or another, photographers had no better option than to put forth a case for a less abstract, more familiar form of authorship in photography. The stage was set to advocate that the "mechanical" products of photography (at least some of them) have much of "Man" in them. Here is what the French photographer Nadar wrote of (presumably his own) portrait photography:

> The theory of photography can be taught in an hour, preliminary technical notions in a day . . . What cannot be taught is the moral intelligence of the subject, or the instinctive fact that puts you in touch with the model, allowing you to size them up and to steer them towards their habits, their ideas, according to each person's character.[12]

Of course, "moral intelligence" aside, "steering models towards the realm of ideas" still does not always constitute artistic authorship of those models. Even less does it guarantee commercial ownership of them. In fact, it is well known that many photography studios employed more than one photographer in addition to the studio's title owner. Further, some studios are known to have operated production lines comprised of several individuals engaged in the manufacturing of every photograph made and sold under their title (often with children to print the photographs and women to retouch them). Thus, in the interest of commercial capitalization and for the purpose of securing a reliable market to match the growing scale of production, professional photographers needed to seek the legal protection offered by copyright law. This had existed in France since the Revolution, granting protection to books, artworks and musical compositions (notably, some form of copyright law also existed in England from as early as 1710, with the Statute of Anne, but this pertained mostly to writings, publishers and booksellers).

We could, in other words, appreciate that it was the relations of production in the nineteenth century, if nothing else, that required photographers to set themselves up as artists.[13] Thereafter it was careless, if not irresponsible, of photographers not to "insert" their "soul" as well as their hands into the production of every image under their trademark. This, arguably, is how photography evolved from being only a natural act of mindless inscription, as Baudelaire would have put it, to a mechanical means of production, with the capacity to become an original human construct.


## A theory

Throughout most of its first century, photography can arguably be defined by the tension between two opposing approaches. In the nineteenth century this was the rivalry between the so-called "realist" photographers and the "artist photographers" whose proclivities Siegfried Kracauer called formative.[14] Artist photographers avoided the scientific approaches of positivism, which realists relied upon, and instead favoured artistic ideas of beauty and creativity. As is clearly evident when looking at Peter Henry Emerson's writing, this was perceived by realists (or naturalists) of the time as complete neglect, if not defiance, of the very properties of the medium. This controversy, however, remained largely unresolved well into the twentieth century. This, I suspect, is due to the beliefs that both "realist" and "formative" approaches held in common.

It was not until the 1920s that one approach or tendency became noticeably dominant.[15] This was arguably "a straight approach of artistic photography" which attempted to harness the subjectivity that Nadar so needed to take pride in with a new notion of objectivity guaranteed by the nature of photography as still a mechanical medium. This hypothesis is, in itself, little more than a sophisticated reiteration and amalgamation of nineteenth-century sentiments. Nonetheless, its importance was in singling out some formalisms that emerged then to exalt individual photographers over their peers, which were consequently demoted to a level almost as low as their technology. These select photographers were subsequently mythologized as belonging to a unique breed of "lone wolves" whose exploits the history of photography was destined to record. "Their photographs bear a personal note", argued the photo-historian Helmut Gershneim about

what he called "creative" photographers, that of their "personality and style, which distinguishes them from countless anonymous 'machine-made' pictures".[16] This narrative is common to most of the (non-technical) histories of photography. The best known of these, Beaumont Newhall's, is a fiction-enhanced narrative devised with the aid of a Hollywood scriptwriter named Ferdinand Reyner.[17] Such emphasis on the unique sensibility of the "photographer-as-protagonist" was consecrated by other twentieth-century histories of the medium as well. Consequently, to this day, individual photographs are routinely celebrated as markers of a photographer's unique genius, thus rendering the artist-photographer as the almost exclusive prism through which history views the broad sweep of photography.[18]

This ideal of creative mastership was repeatedly personified in one unique character — the American landscape photographer Ansel Adams. Often frowned upon by contemporaries, Adams was also a thinker capable of subtle distinctions. One of his under-appreciated pronunciations is that the photographic negative is equivalent to the composer's score, while the print is the performance.[19] What this articulation was intended to express is the belief that photographs never amount to interpretation alone, as many today would still argue. Rather, a photograph always requires skill and creativity to become an original creation.

Thus, when Beaumont Newhall organized a Museum of Modern Art exhibition for Ansel Adams he was compelled to claim that "each print is an individual expression",[20] as if to fence off the potential charge that the photographic process was merely mechanical. Further, the exhibition's title was *60 Photographs: A Survey of Camera Esthetics*, as if to argue that photography is the production site of something intensely human (aesthetics at that point being something that machines neither do nor take interest in).

Crucially, Adams' intriguing idea of visual performances was picked up only decades later by William J. Mitchell in his discussion about works of art with potentially more than one instantiation.[21] Further, this terminology becomes even more interesting if we bear in mind that just as musical scores can be performed with multiple arrays of instruments, so too can photographs be interpreted in multiple ways. This seems almost straightforward when nowadays any photograph can be made to appear on multiple platforms which may or may not run identical manifestation protocols. My contention is that this was always the case. In other words, Mitchell's arguments pertaining to digital imagery in fact apply to all photographic images, including those produced before photography became consensually digital. This means that it was photography, before digital media, that introduced the previously impossible rift between the concepts of "artwork" and "artefact".

In his widely read educational books, Adams repeatedly advanced a dialectic between the photographer and the technology, arguing that the photographer must dominate his equipment, not the other way round.[22] This attempt to establish artisan credentials for photography relied on what another photographer, Minor White, himself a guru of "subjective" photography, later called "pre-visualization". Intriguingly, this term invokes traditional notions like scientific modelling and mapping, as well as various applications that came to prominence only decades later in medicine, warfare and astronomy. Importantly, this modernist impulse was mainly concerned with the coming-into-being of the image and its embodiment as an artefact

by a *singular* artistic vision. Tellingly, some romantics felt that artistic vision, in and of itself, may not suffice to grant full authority to photographic prints. They raised the concern that the authorship of prints made from the negatives of a deceased photographer is perverted. Of course, this worry piggybacks on the nineteenth-century notion that photography, in one way or another, necessarily makes human labour and activity redundant. Therefore, in order to accord the photographic artefact with artistic worth, a method had to be invented to ensure that it is the artist's labour (and no other) that generated the artefact. Thus it was sometimes required that the translation from score to performance be made in the physical presence of the composer, or, better yet, that it be physically facilitated by them.[23]

This impulse remains largely popular among most practitioners and critics of photography. In fact, opined Allan Sekula, the art world routinely transforms the artist-photographer, regardless of their working context, into "an autonomous auteur with a capacity for genius". Put differently, his contention does not concern the separation between human labour and that of the machine. Rather, it pertains to the elevation of only *some* forms of human labour, those of the artist-photographer, above other labour forms which are arguably deemed lowly and mundane. In art histories of photography, Sekula summarized, "[a] cult of authorship, an auteurism, takes hold of the image".[24]

Thus far I have attempted to explain how most theories of photography have insisted that the production of photographic images is a work-intensive effort, and that human beings inevitably govern the process. This still does not explain why nowadays, long after such sentimental notions might have waned, they remain durable, despite the irrevocable engulfing by computation of all aspects of the photographic process. It is therefore appropriate to now look at various applications of photography today, the structures of belief they generate and the epistemological qualities that they yield.

## Photography post-photography

Many technologies articulate the incarnation of photography as a novel form of computation. One fascinating example that highlights the extent to which the labour of the photographer, down to its fundamentals, has been perturbed, shaken and problematized is the technology of Light Field photography launched in 2012 (often referenced by its commercial name, Lytro or in its second generation as Lytro ILLUM).

Much like other image-capture platforms today Light Field images enable for post-exposure aperture and perspective adjustments. Unlike other platforms they also allow for post-capture focusing and re-focusing. In Lytro's advertising jargon these are called "Living Pictures", a thought-provoking description that encapsulates many of the psychological anxieties accompanying earlier breeds of photographs. If only to avoid such pitfalls, I prefer to dub them "Motile Still Images", a description which, I feel, is more timely and appropriate for describing other emergent technologies and art forms. Crucially, Lytro's puzzling refocus effect is achieved not by mechanics or by its slightly unusual optics but rather by powerful computational abilities which are embedded in the capture device (please see Figures 1-3). With this it should become evident how much photography has become, quite literally, a form of computation.

Fig. 1    Lytro ILLUM sample image, Markus Nolf, lightfield-forum.com.



Fig. 2    Lytro ILLUM sample image, Markus Nolf, lightfield-forum.com.



Fig. 3    Lytro ILLUM sample image, Markus Nolf, lightfield-forum.com.

Furthermore, Light Field images can always be (and in fact *are designed to be*) focused by the viewers, whoever they may be and no matter their viewing context and technology. They are dynamic "unsettled" images which are *not* under the control of the photographer. Arguably, this technology prompts the question of whether photography was ever a solitary act of one human, as some still tend to imagine it. In fact, Daniel Palmer argues that photographic production is highly impersonal, with "many hands . . . often involved in the broader photographic process of printing, editing and distributing images".[25] I concur with Palmer's analysis so long as we don't take hands to mean only the human organs with which we reach out and touch. Rather I prefer thinking of hands as connected to eyes and nerve systems, not all of which we are aware of and none being under our control. This is something we always succumb to. Here it is even more dramatic. To successfully shoot a light field image, a photographer embraces lack or loss of control and rejoices in them.

As noted, another striking, although not unprecedented feature of Lytro enables the user to operate a perspective shift — that is, to change the viewing angle when looking at a Light Field image. Light Field images are thus photographic images wherein there is no photographed vantage point and the viewer can, as it were, see them from various vantage points. Thus, it has been argued, Light Field images are, in a way, "digital sculptures".[26] This interpretation is, in my opinion, not accurate. However, it does help to clarify that even if Light Field images are still "captured" or "taken" they are mostly made, generated and *visualized* and experienced in a manner quite different from other images. A Light Field image, concludes Winfried Gerling, "can deploy its meaning only in computer-based environments".[27]

More recently, Amazon has also introduced a similar technology called "Dynamic Perspective" with its "Fire Phone" (launched in 2014). Here four front-facing cameras and a gyroscope are used to track the movements of the viewer of an image on the screen so that the operating system can adjust the image to give an impression of depth and 3D movement. Interestingly, these images are not only unfixed they are also, more than any other images, un-fixable. Arguably, in their responsiveness to the viewer's movements, these images offer an experience closer to what we recognize as unmediated seeing. For those very reasons, it also becomes obvious that, while technically possible, printing such images defeats the purpose of their respective technologies and there is little reason to do so. Both these technologies have been commercial failures.[28] Nevertheless they do, more than other technologies, demonstrate the extent of the change that photography has undergone — the digital photograph cannot be experienced with what Lambert Wiesing calls an "image carrier" — paper or other material support.[29] It simply cannot utilize it. In fact, I argue, the same was always partially true of photography in the main — delegating value to a photograph tethered to a photograph carrier always contradicted the very properties for which we valued photography as *itself* a technology. Therefore, it is somewhat paradoxical that the "newness" of digital photography is still occasionally celebrated while, at the same time, the obsolescence of "analogue" photographic materials is mourned. The performance known as the photographic print has indeed disappeared but perhaps its extinction is to be welcomed. At least it is now clear that the material artefact (or rather material "artefactuality") was always a somewhat redundant part of

photography. It was no more than one possible type of performance and, by far, not the most interesting one.

These days, photographs are rarely fixed and are often actionable data that can be changed in retrospect. Thus, contemporary systems of photographic production are becoming ever more diffuse, both temporally and spatially. They include not only the pre-design of the camera and its darkroom (or Lightroom) but also the overall architecture of what was once called the book or the gallery and is now called the computer, its connected peripherals, devices and networks. In fact, many contemporary systems simply do not even have anything equivalent to a primary photograph which could be treated (or copyrighted) as an original score. Consequently, there is now decreasing necessity (and likelihood) for individual authorial responsibility over image content, authorial determination of meaning and authorial prestige. This, to reiterate, makes it difficult (if not impossible) to define conditions that guarantee artefactuality. Thus, the traditional distinctions between producers and consumers of images evaporate. It is for these reasons, amongst others, that it is time to altogether abandon traditional conceptions of artefactuality in photography which depend on and are only identifiable through stable, enduring and finished states of presence. Instead we must seek other notions that define a photographic artwork in terms of continual mutation and a proliferation of variants.

Within this new environment it is no wonder that we are witnessing what Daniel Palmer has called "a collaborative turn" in photography. However, while Palmer is mostly referring to collaborations between photographers and other human-to-human agencies, I am interested in different types of collaboration. At the present moment, these still occur between humans and machines, computers and other non-sentient systems. In the near future these will mostly occur between such systems, but without any human intervention.

Is the photographer's sensitivity still, as it has been since Nadar and before him, a precondition for a photograph's artefactuality, or has it died out? Whose efforts should be credited for the contemporary omnipresence of photographs? Palmer contended that "just as media representations of the artist-as-genius have proved remarkably durable, the figure of the lone photographer is an enduring myth".[30] I add that it is the idea of a *human* artist-photographer that ought now to be understood as myth or folklore.

Arguably, when multiple vantage points can be achieved at almost no cost to the viewer, there is no place for a single point of view. Similarly there is no need for a photographer's eye. Instead of human hands and eyes we now have continuous and contextually interactive, visually educative processes wherein biological and artificial eyes reflexively commune with each other, and with fragments and alternatives borrowed from other technological progenitors. Clearly this presages a threat to the human photographer. Does it also precipitate the dissolution of photography, at least as a distinct artistic form?

With this in mind, it should come as little surprise to us that the activity of interpreting a photograph, once reserved exclusively for human operators, has also been outsourced and is now routinely performed by other executors: other types of agents, software programs and the end user, who may not even be human. Such

changes ought to have major implications for how we think about the idea of photography and its fundamentally human-centred terms.

## Photography and numerics

How then should one think of photographic images *today*? The digital image, argues Daniel Rubinstein, necessitates another language in which to describe photography:

> images do not appear as singular, individual or discrete; they do not have borders that separate one image from another, rather data is distributed according to certain rules, sending some of it to the screen as an image, some of it to the speakers as sounds and some of it to the printer as text. These "images" traverse the networks not as snapshots but as dynamic arrays of electronic signals and packages of data.[31]

The status of image-making, argues Rubinstein, has irrevocably changed. When an image is transported or transmitted to various locations it is packaged not as an image, a picture or a photograph but simply as a cluster of data. Only later, if and when it arrives at the designated user's terminal, will it become something more. Often it remains just data. As a consequence of this shift from visual to the discrete and calculable, photography has become something different, something which is at times *in*calculable, as it depends on numerous factors, contexts and scenarios, some of which, at present, are beyond our innate comprehension.

Put differently, the point made by recent image technologies is that the photograph is now inseparable not from the human photographer (if there still is such an entity) but rather from the context and milieu of its utterance, which is, nowadays almost without exception, potentially transmittable digital information. Furthermore, with computer software not only capable of generating our images for us but also increasingly capable of interpreting them, via metadata and other means when they reside in databases, or via image pattern recognition elsewhere, another watershed moment has arrived — neither photographer nor viewer may be who we were accustomed to believe.

In fact, asserts Rubinstein, it is no surprise that there is a tendency to refer to the post-industrial technical apparatus, which underlies all image production today, with bucolic metaphors such as clouds, shadows, farms, streams and flows.[32] What this terminology suppresses is the understanding that, in spite of the exactitude of the digital image file, its visible aspect on the computer screen conceals various processes of algorithmic interpretation that are, and will remain to most of us, not only invisible but incomprehensible. Indeed, humans were once necessary to facilitate a "natural" way of picture-making. Now, however, this natural way has been domesticated, industrialized and made efficient beyond our reach. "Picture-making" today is often "image-visualization" done on-the-fly. Photography today therefore becomes functionally simple but structurally complex beyond our comprehension.

Thus, perhaps it is time to consider the possibility that contemporary photographic images need not be theorized as images at all. The best way to make this understood is

by recourse to the popular term "digital image" (photographic or other). This term, it is high time to elucidate, is somewhat of a contradiction in terms. "Digital" is nothing but a form of storage. Nonetheless it is an extremely efficient form of storage because it is the only form a digital computer can "see" (if it could be said to see anything) and the only form it can manipulate by one or several of its algorithms. The "image", on the other hand, whether generated once as a print or generated 60–100 times a second to be projected through a monitor, is *never* digital and is *always* analogue, otherwise we humans could never see it because we cannot see voltage differences (and rarely can we make visual sense from other forms of digital representation). Thus, and contrary to everything theories of photography have had to say in the matter over the last two decades, theorizing the digital image is impossible because images do not exist in digital form. Digital image-making, on the other hand, does exist and still requires proper theorizing.

Therefore, contemporary images ought to be theorized as multifaceted relay systems, go-betweens that weave together two worlds — the physical world of objects and humans which is always analogue and a parallel world of data which is digital. Within this limbo any such relay system necessarily becomes what Geoffrey Winthrop-Young has described as "an impoverished aristocrat" forced to serve as tour guide on their former estate.[33] To the extent we insist that these relay systems cannot be understood as anything but images, or at least named as a new breed related to the family of images, we still must remember that we are using the word image only provisionally, almost as a form of cultural shorthand. For this purpose, I suggest thinking about *mathematical images*. This title shifts the emphasis from considering images in visual terms towards a nomenclature drawn from the syntax of Boolean algebra and the semantic structures of computational processes. Importantly, this new breed possesses new key properties — no longer depiction but rather transmutability. This means that photography, if that is how we want to label one strand of contemporary image-making, is an unstable entity — arguably a species of programs that produces meanings only through the aggregation and the embodiment of pure mathematical abstractions.

From this view, it is only a short slide down a slippery slope towards the concept of the *operational image* as a possible definition for some mathematical images, a sub-type as it were. *Operational* images, as Harun Farocki conceptualized them, are products of computational tracking technologies designed to function *without* human intervention.[34] Therein it is not unusual for an image to be or to become equipped with means that gather, compute, merge and display visual data in real time. Importantly, the world they visualize and interact with is already *pre*determined — it is already calculated and archived. Once activated, operational images discriminate automatically: they process and compare continuously until they reach an end (in the case of automatic warheads) or until they reach the limit of the databases and processing power which bring them into being (if such a limit may be said to exist). Some operational images are produced for human consumption but others are pro-duced exclusively for other non-sentient entities, "vision machines"[35] controlled by computer programs which do not see (at least not in the sense that we do). Farocki, in other words, anticipates that the disappearance of labour from the creation of images also entails the elimination of visual work in them.

## Photography post humans

For better and for worse, many images today are, from their genesis, equipped with means to compute and display heterogeneous data in real time. This brings new functionalities to the convergence of vision and representation. If, on the visual level, some images still adhere to a familiar paradigm, on the computational level such images operate within a new, machine – algorithmic paradigm. And these two paradigms mostly function in synergy wherever contemporary image production takes place.

Thus, to produce a photographic image today can no longer be seen as a labour-related, or even work-related effort. In the hardest case, it is simply a matter of activating and combining several autonomous processes. *If* the result is an image then it should be borne in mind that it is a *different* kind of image. It is no longer a fixed representation of a solid world, a "hardimage" as it once was, but an unstable configuration of ever-dynamic states. Crucially, this changing configuration is always an algorithmic or programmatic interpretation applied, at least in part, on malleable data sets. It is for this reason that Ingrid Hoelzl and Remi Marie choose to title it a "Softimage".[36] I find this title almost apposite. Its only shortcoming is in implying that the new image hinges on software alone, without hardware. To that end, I prefer titling it the *programmatic image*, to indicate its belonging to what Vilém Flusser called the programmatic realm, wherein both software and hardware are pre-inscribed possibilities within the program of the apparatus (which, in turn, is a pre-inscribed possibility within a larger meta-program).[37]

No matter the working definition we choose, most of what we take as "a photographic image" isn't made or controlled by humans. Similarly, many photographic images aren't made by humans at all. Arguably, nor are they made *for* humans.[38] This is not likely to change. Crucially, the question then becomes: What meanings can the contemporary photographic or quasi-photographic image retain when much of its information exchange occurs from machine to machine? Is it then reduced to an operational code or does it become a platform carrying new meanings — an altogether new cultural form wherein labour, work and even "creativity" have been redefined?

Clearly, the term "photographic" can no longer denote a specific production mode:

> What do I actually mean when I say a photograph of a house depicts that house, and a computer image of an airplane yet to be built is a model? . . . Any way I formulate the difference between depiction and model, I come to grief . . . It can therefore be said of a photographer that he has made a model of a house in the same sense that the computer operator has made a model of a virtual airplane.[39]

"Photographic" in other words, should only mark a particular aesthetic distribution. However, this distribution, regardless of how it was produced and no matter if materially displayed or not, is capable of yielding a unique epistemic structure. Importantly for us, being the carbon constructed beings that we still are, this epistemic structure is much desired for it bears a potential for authority that we still yearn for. This authority was previously called nature, then dubbed machine and later referred to as index or, elsewhere, causality. Barricaded on countless occasions by clichéd ideas about the visionary artist-photographer, this authority now rises from the sand again.

Recently we have chosen to accept the coupling of machine vision with artificial intelligence as its reincarnation.

## Conclusion

Photography was often understood as the functional convergence of vision and representation, made possible by optics, mechanics and chemistry. The mathematization of photography and its subsequent dissolution as an autonomous medium have rendered the photographic image itself a performative instrument. These qualities necessitate an understanding of the world as no longer a stable state of affairs preceding the image but rather as an open-ended stream of recursive possibilities wherein humans play little part.

I thus arrive at an expanded definition of the contemporary photograph: it is an autonomous programmatic performance of data-gathering processes. This includes operations of processing, rendering into information and its subsequent proliferation and exchange. Importantly, these processes are mostly performed by non-human agents, nowadays mostly for non-human viewers. A photograph thus no longer functions as a political and iconic representation but only plays a role in synchronic data to data relationships.

To that end, Ingrid Hoelzl and Remi Marie propose the definition of *Postimage*.[40] This, I find, is the most appropriate term with which to think about the clusters of visual information our habitus is so saturated with. It assumes that cameras are but one type of sensor among many, it welcomes the integration of visual information collected from cameras with other forms of information and it hails the creation of images from non-visual information. Crucially, within the context of photography, this definition excludes the possibility of human labour or work. It similarly exceeds the confines of the humanist and anthropocentric concept of the photograph by applying a post-humanist point of view to the image. It alludes to a point where human vision is only one among many possible sentient sensing systems to which photography is equatable. Furthermore, it now prompts us to consider what images (and imaging) may mean with regard to non-visual sentient and non-sentient processing systems. This is now a matter of urgency if we wish to maintain the belief that human consciousness and human activity are not completely irrelevant to photography.

Either way, it is now clear that the entity we knew as the artist-photographer is nearing the end of its shelf life. In its place a wealth of other techniques, practices and systems is now available. Those already enable the harvesting of photographic images from numerous everyday photographers. Further, it has also emerged that it is not only the artist-photographer who is in danger of extinction. In fact, it is the human photographer who is becoming redundant altogether. Where once seen as that element in the process responsible for imbuing the image with artistry, meaning or resistance, the human is these days an increasing burden. The very absence of human intervention now simplifies the production of authoritative images.

## Disclosure statement

No potential conflict of interest was reported by the author.

## Notes

1      Palmer, "Light, Camera, Algorithm," 144.
2      Toister, "The Privileges of the Quasi-Photographic Image."
3      The first instance of such use that I am aware of was as early as 1992 in Mitchell's *The Reconfigured Eye*. There have since been numerous titles featuring this or similar terms: von Amelunxen, Iglhaut, and Rötzer, *Photography after Photography*; Ritchin, *After Photography*.
4      Tietjen, "Post-Post-Photography."
5      Zylinska, "Photography after the Human," 167–8.
6      Quoted in Buckland, *Fox Talbot and the Invention of Photography*, 35.
7      Niépce's heliographs required exposures of approximately eight hours while Daguerre's first processes required 15 to 30 minutes. By the early 1840s Daguerre's process had come down to approximately two minutes and sometimes even less than one. Across the channel, Talbot's first "photogenic drawings" needed 30 to 60 minutes, though with his subsequent invention of the "calotype" process, this was quickly reduced to a few. The advent of glass plate photography in the late 1840s and early 1850s accelerated exposures by a comparable factor and brought exposure times down to a matter of a few seconds. Exposure times of fractions of a second only became available in the 1870s. Eder, *History of Photography*, 501–6.
8      See for example Dominique François Arago, reprinted in: Trachtenberg, *Classic Essays on Photography*, 15–26.
9      Batchen, *Burning with Desire*.
10     Daguerre, quoted in Gernsheim and Gernsheim, *L.J.M. Daguerre*, 81.
11     Baudelaire, *Art in Paris 1845–1862*, 297.
12     Quoted in Virilio, *The Vision Machine*, 54.
13     Gaines, *Contested Culture*.
14     Kracauer, *Theory of Film*, 12–18.
15     Siegfried Kracauer used the word approaches, his contemporary, Rudulf Arnheim, used the word tendencies in the same context with very similar meaning.
16     Gernsheim and Gernsheim, *L.J.M. Daguerre*, 10.
17     Hill and Cooper, *Dialogue with Photography*, 407–8.
18     Daniel Palmer's recent book is a rare and bold attempt to challenge this historical form of theorizing photography. Therein Palmer investigates the notion of collaboration in photography through terms like collaboration, community and society. In my mind, the only major flaw in Palmer's important narrative is that he recognizes (or at least names) only human to human forms of collaboration. Palmer, *Photography and Collaboration*.
19     "The negative is comparable to the composer's score and the print to its performance. Each performance differs in subtle ways." While this has been quoted numerous times, I cannot locate its original source.
20     Quoted in Palmer, *Photography and Collaboration*, 27.

21      Mitchell, *The Reconfigured Eye*, 49.
22      Adams, *Basic Photo 1*, 7.
23      For interesting discussions on this matter please see: Mitchell, *The Reconfigured Eye*, 49–51; Warburton, "Individual Style in Photographic Art."
24      Sekula, "Dismantling Modernism, Reinventing Documentary," 864–5.
25      Palmer, *Photography and Collaboration*, 117.
26      Benovsky, "The Limits of Photography," 731.
27      Gerling, "Moved Images," 301.
28      Amazon Fire Phone has been discontinued in August 2015 after only 13 months on the market. Lytro living pictures can still be experienced by users with appropriate software but the Lytro pictures web service has ceased operations in November 2017. Lytro's new business model is oriented towards the production of cinema and 3D graphics.
29      Wiesing, "Pause of Participation," 240.
30      Palmer, *Photography and Collaboration*,, 1.
31      Rubinstein, "The Digital Image," 6.
32      Ibid., 11–12.
33      Winthrop-Young and Horn, "Machine Learning."
34      Farocki, "War at a Distance."
35      Virilio, *The Vision Machine*.
36      Hoelzl and Marie, *Softimage*.
37      Flusser, "Our Programme."
38      Paglen, "Invisible Images" ; Steyerl, "A Sea of Data," 72. The crucial difference between, for example, automated red-light photography and these new types of photography is the fact that here humans neither produce and view these images nor can they produce and view them.
39      Flusser, *Into the Universe of Technical Images*, 42–3.
40      Hoelzl and Marie, "Posthuman Vision."

# References

Adams, A. *Basic Photo 1: Camera & Lens- Studio, Darkroom, Equipment (His Basic Photo)*. New York: Morgan and Lester, 1948.

Batchen, G. *Burning with Desire: The Conception of Photography*. Cambridge MA: The MIT Press, 1999.

Baudelaire, C. *Art in Paris 1845-1862: Salons and Other Exhibitions*, edited by J. Mayne. London: Phaidon Press, 1965.

Benovsky, J. "The Limits of Photography." *International Journal of Philosophical Studies* 22, no. 5 (2014): 716–733. doi:10.1080/09672559.2014.923015.

Buckland, G. *Fox Talbot and the Invention of Photography*. London: Scolar Press, 1980.

Eder, J. M. *History of Photography*. Translated by E. Epstean. New York: Dover Publications, 1978.

Farocki, H. "War at a Distance." 58 mins. Berlin. 2003.

Flusser, V. *Into the Universe of Technical Images*. Translated and edited by N. A. Roth. Minneapolis: University of Minnesota Press, 2011.

Flusser, V. "Our Programme." *Philosophy of Photography* 2, no. 2 (2011): 205–209. doi:10.1386/pop.2.2.205_7.

Gaines, J. M. *Contested Culture: The Image, the Voice and the Law*. Chapel Hill, NC: University of North Carolina Press, 1991.

Gerling, W. "Moved Images – Velocity, Immediacy and Spatiality of Photographic Communication." Paper presented at the Helsinki Photomedia, Helsinki, 2014.

Gernsheim, H., and A. Gernsheim. *L.J.M. Daguerre: The History of the Diorama and the Daguerreotype*. New York: Dover Publications, 1968.

Hill, P., and T. Cooper, eds. *Dialogue with Photography: Interviews by Paul Hill and Thomas Cooper*. Stockport, UK: Dewi Lewis Publishing, 2002.

Hoelzl, I., and R. Marie. *Softimage: Towards a New Theory of the Digital Image*. Bristol, UK: Intellect, 2015.

Hoelzl, I., and R. Marie. "Posthuman Vision." Paper presented at the 22nd Symposium on Electronic Art: ISEA2016, Hong Kong, 2016.

Kracauer, S. *Theory of Film: The Redemption of Physical Reality*. London: Oxford University Press, 1960.

Mitchell, W. J. *The Reconfigured Eye: Visual Truth in the Post-Photographic Era*. Cambridge, MA: The MIT Press, 1992.

Paglen, T. "Invisible Images (Your Pictures are Looking at You)." *The New Inquiry* (2016). https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/.

Palmer, D. "Light, Camera, Algorithm: Digital Photography's Algorithmic Conditions." In *Digital Light*, edited by S. Cubitt, D. Palmer, and N. Tkacz, 144–162. London: Open Humanities Press, 2015.

Palmer, D. *Photography and Collaboration: From Conceptual Art to Crowdsourcing*. London: Bloomsbury Academic, 2017.

Ritchin, F. *After Photography*. New York: W.W. Norton & Company, 2009.

Rubinstein, D. "The Digital Image." *Mafte'akh; Lexical Review of Political Thought* 6, no. 1 (2014): 1–21.

Sekula, A. "Dismantling Modernism, Reinventing Documentary (Notes on the Politics of Representation)." *The Massachusetts Review* 19, no. 4 (1978): 859–883.

Steyerl, H. "A Sea of Data: Apophenia and Pattern (Mis-)Recognition." *E-Flux Journal* 72 (2016).

Tietjen, F. "Post-Post-Photography." In *The Routledge Companion to Photography and Visual Culture*, edited by N. Moritz. London: Routledge, 2018.

Toister, Y. "The Privileges of the Quasi-Photographic Image." *Ubiquity: the Journal of Pervasive Media* 5, no. 1 (2016): 221–229. doi:10.1386/ubiq.5.1.221_1.

Trachtenberg, A., ed. *Classic Essays on Photography*. New Haven: Leete's Island Books, 1980.

Virilio, P. *The Vision Machine*, edited by J. Rose. Bloomington, IN: Indiana Univ. Press, 1994.

Von Amelunxen, H., S. Iglhaut, and F. Rötzer, eds. *Photography after Photography: Memory and Representation in the Digital Age*. Munich: G+B Arts, 1996.

Warburton, N. "Individual Style in Photographic Art." *British Journal of Aesthetics* 36, no. 4 (1996): 389–397. doi:10.1093/bjaesthetics/36.4.389.

Wiesing, L. "Pause of Participation. On the Function of Artificial Presence." *Research in Phenomenology* 41, no. 2 (2011): 238–252. doi:10.1163/156916411X580977.

Winthrop-Young, G., and E. Horn. "Machine Learning." *Art Forum* 51, September (2012): 473–479.

Zylinska, J. "Photography after the Human." *Photographies* 9, no. 2 (2016): 167–186. doi:10.1080/17540763.2016.1182062.

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