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The privileges of the quasi-photographic image

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Abstract

Numerical representation enables more than efficient processability and increased programmability. As it makes obsolete qualities that have previously been used to categorize individual media it also increasingly blurs the borders between them. Therefore it should be seen as no less than surprising that many contemporary systems still use images as their exclusive output channel. An associated conundrum is the fact that, of those many images, a baffling ratio appears in photographic form. Why this persistence on familiar pseudo-verisimilitude? What are the privileges of the quasi-photographic aesthetic? Much wizardry is required to make data packages look recognizable. This decision, when taken by the creators of imaging algorithms, is of course ornamental but it is also much more. In acting as mere effect quasi-photographic images can function as sophisticated 'go-betweens' that weave together selected aspects of the physical world with the augmented world of data in ways that other media simply cannot. Thus, perhaps it is time to consider the possibility that the quasi-photographic need not be understood only as a form of interface but also as a concession required by and for our inferior human processing capabilities.

1. Photography

Today photography is difficult to define and almost impossible to contain. It seems to be nowhere and everywhere simultaneously, its physicality near to invisible and its practices and uses ever more fluid. Is photography over, as some suggested? (San Francisco Museum of Modern Art 2010). Perhaps not, because it is also noticeable that photography's symbolic apparitions are now 'endlessly animated across the cultural field' (Palmer 2015: 144). Consequently there is an exponential increase in the creation and dissemination of photograph-like images. These images, however, are not identical to the products of the familiar technologies of optics, mechanics and chemistry. They are images that have all the appearance and hallmarks of photographs but are not the products of photography's historical or conceptual apparatuses. Instead, it is invisible 'simulation machines' – programmes and other algorithms – that now produce what we consistently take as photographs.

The material photograph, it is clear, has become extinct. The photographic image has also been irrevocably altered by computation. Does this precipitate the dissolution of photography altogether? And does it presage the emergence of another cultural form? What should it be called? Arguably there is no place for a single point of view when multiple vantage points can be achieved at almost no cost to the end user. All we require is a visual context. Similarly there is no longer a need for a human (photographer's) eye. Instead we have continuous and contextually interactive, visually educative processes wherein biological and artificial eyes reflexively commune with each other, and with other fragments and possibilities borrowed from other technological progenitors. Puzzlingly, as these operations become increasingly elusive, the images that they generate become ever more seductive, ever more familiar. The conundrum, in plain words, is this: 'Photography has all but ceased to exist; yet there is now more 'photography' than ever before. Why?'.

To illustrate the problem, I begin with a brief delineation of the conceptual changes wrought on photography by the technological advents of the last decades. This will be followed by an account of photography's unique cognitive accessibility. I shall conclude with a suggested definition of what I call 'quasi-photography' – a cultural form whose outputs, quasi-photographic images, afford the same cognitive accessibility, but are also actionable and programmable.

2. Post-photography

In the early 1950s it became possible to scan and convert images into arrays of binary digits and hence to make them into electronically processable information. Nonetheless, it was not until considerably later, around the mid 1970s, that the transition from 'analogue' to 'digital' processes was set in motion. (I place both terms in quotation marks because they are highly problematic in the context of photography [Toister 2014, 2015].) The terms 'digital photography' and (consequently)

'analogue photography' started gaining currency in the early-mid 1990s (Jäger 1996). The same goes for the terms 'post-photography' and 'after photography'.[1]

Contrary to common opinion, I argue that these shifts have gone smoothly, too smoothly. This, I believe, is due to the relatively stable pictorial conventions within which they took place. For many, all that was necessary to accommodate for the arrival of 'the digital' were just creative constructions of language. Think for example about terms such as the 'digital negative format' (DNF) or about the tendency to name certain folders 'albums'. The most creative and self-contradictory construction of language is of course the 'digital print'. Nowadays little has changed and even extremely constructed pseudo-photographic visualizations are still measured in ontological terms. Imperative questions relating to the structure of knowledge derived from these visualizations do not figure at all in the repertoire of the theory or philosophy of photography.

3. Photographs

A photograph can always be measured and subjected to a quantitative analysis subsequent to its production. This is by virtue of an allegedly causal chain that, with the agency of light or other energies, 'connects' the photograph to the object that it is of. The history, the theory, even the philosophy of photography, contain numerous descriptions to that effect.

A computationally generated visualization, on the other hand, cannot be measured by or subjected to similar methods of analysis. In most cases computationally generated visualizations do not bear the stamp of their processing on the pictorial surface. This is despite the fact that their formal appearance is derived, sometimes exclusively, from their (mathematical) processing. Nonetheless, many such images adopt the look and feel of familiar technical depictions. Instead of foregrounding the piecemeal, additive processing of individuated pixels or even vector-based curves, such images intentionally bear properties such as continuity, density and repleteness, which suggest an unambiguous form of irreducibility. However, when we examine the means by which they are produced, it is obvious that their being images is almost arbitrary.

Two characteristics stand out as common to many such visualizations. First, and most importantly, they require that extensive mathematical transformation occur to produce the data that can then be represented in the form of an image. Often the result of signal detection (when such exists), data collection, correction and reconstruction is a numerical value assigned to each pixel (or to each voxel). The final conversion of these data into the form of an image is often simply a matter of assigning a grey level, or colour level, to particular ranges of numerical values and then displaying the data in a two- or three-dimensional array. It could just as easily be represented in other ways because raw mathematical data are, by default, completely indifferent towards their content and towards the 'sensory field' within which they will appear. The crucial point here is that computer

1. The first such instance that I am acquainted with was as early as 1992 in William J. Mitchell's book *The Reconfigured Eye* (1992). There have since been many consecutive publication titles expressing a similar sentiment. For example: the exhibition and catalogue *Photography after Photography* (Von Amelunxen et al. 1996), the book *After Photography* (Ritchin 2009). The most recent contribution to this list is probably Joan Fontcuberta's collection of essays titled *Pandora's Camera: Photogr@phy After Photography* (2014).

treatment of data is required prior to the production of the images, that is, for generating them as images in the first place (and not only for 'packaging' them after they have been generated). A second characteristic of many such images is that they are often manifested as naturalistic, sometimes even photographic, or what I call 'quasi-photographic'.

Therefore in order to define quasi-photographic images we first ought to look into why they are images in the first place. After we have located the reason for this, we will be able to understand what privileges they afford us. A novel account by Megan Delehanty proposes three reasons for the persistence of images in science: historical preference, rhetorical power and cognitive accessibility (2005, 2009, 2010). Proceeding from Delehanty's ideas, I argue that the second and third conditions, if developed, can also be taken to explain the popularity of quasi-photographic images in all quarters of culture and the media.

The first of Delehanty's factors, historical preference, is easier to understand than the other two. In many ways it is elucidated by some of the customary narratives within art history. It is partially explained by postmodern critiques as well. In short, in the last 180 years we have grown increasingly accustomed to 'seeing' by means of photographs. We recognize no other way of understanding ourselves. We know no better way to define the world around us.

The second factor, rhetorical power, has been discussed within art history, aesthetics and even in the philosophy of science. Interestingly, it is not only in art but also in science that there is a well-documented preference for the use of visual representations that resemble what we get by direct observation. Historically, we have always taken images to be reliable sources of information for certain features of the world. This is due to the fact that, visual perception, in most conditions, is reliable. Thus, ways of investigating the world that disguise themselves as straightforward, unaided, visual observations are more easily taken to also be trustworthy. In a nutshell, 'seeing is believing', and when new ways of 'seeing' come up, we are inclined to think that that we should believe what we 'see' in them too, whichever way this seeing is facilitated, mediated or processed.

Another explanation for the persuasive power of images is that we are simply drawn to attractive images. We like looking at them and we like making them. However, even if the beauty of the images may, in some cases, be an end in itself, it may also serve other purposes. Therefore I will now briefly discuss a type of relationship with images that once only photographic technologies could generate. To do this, I will develop the third and most interesting of Delehanty's reasons for the surprising persistence of images – cognitive accessibility.

Photographs are so cognitively accessible because of three separate sub-qualities, which they possess and other images do not. The first is granularity. Granularity is the extent to which a system can be broken down into small parts, either by the system itself or by its observation or description. It is the extent to which a larger entity is subdivided. In terms of granularity, coarse-grained systems consist of fewer, larger components whereas fine-grained systems consist of more, smaller

components. For example, if a room can be broken into centimetres then it is a system with fine granularity. If, for whatever reason, a room can only be broken into metres then it is a system with coarse granularity. Photograph-like images usually maintain a consistency of granularity from object, through instrument, to depiction.[2]

Second the data structure of photographs preserves the visual properties of objects in a consistent way. In other words it 'breaks up' those objects competently and 're-assembles' them more effectively than most other forms of data do. Further, in doing so it usually reassembles these objects within predetermined, finite error bounds.

The third and most important sub-quality is the mode of data preservation and presentation. In a photograph, consistency of granularity and structure preservation come unencumbered. The photographic image itself preserves only some forms of information and it does so very efficiently. However, it omits other forms of information. Most notably it preserves visual information but omits what Jonathan Cohen and Aaron Meskin call egocentric information – information about the object's locale and chronology (2004, 2008). Such information may at times be preserved by other means such as captions, wall labels or metadata but it is not preserved by the image itself. Thus, the cognitive accessibility of photographs provides a unique epistemic structure – select information with no strings attached.

4. Quasi-photographic images

Photographs present us with complex information in ways that are easily accessible to our cognitive apparatus. That is a straightforward and uncontroversial fact. Until recently, the larger and more complex the information set, the greater were the epistemic advantages of using photographs. However, cognitive accessibility is non-discriminatory; hence, the advantage that photographs had over representation of portions of information in other formats has diminished. There are now forms of visual (and non-visual) representation that can similarly enable us to make the same sorts of judgements in the way that once only photography could. Therefore, it is becoming increasingly clear that, even in cases where there is some advantage to using a photograph, or that a photograph is simply easier to use, it no longer facilitates operations that could not in principle be accomplished using another form of visual representation.

Mathematically derived computerized environments often provide better representations of those aspects of the real that concern us. They can capture processes that photography just cannot capture or represent. They can depict objects that are inaccessible or simply do not exist. They routinely provide representations that, assuming certain conventions of interpretation and use, give a better handle on many concepts. Visualizations and models may also give us better and more predictable control of inferential speculations and perceptual extensions in ways that photography

2. However, if one is a bacterium or a death star then the difference between metres and centimetres does not account for much. In other words granularity is always measured against some benchmark, which, in the above example, is of course human activity.

cannot. Thus, it is now necessary to extend the epistemic structure of photographs to include visualizations and computational models of the world. If nothing else it will furnish these forms with 'photographic authority' – the authority to provide us information and inferential guidance, which they are, at present, incapable of conveying.

Furthermore, the above definition for the epistemic structure of photographs may also be used to argue that any image can be considered a photograph, irrespective of how it was made, so long as it satisfies the same two conditions that photographs do: (1) preservation and presentation of some information in a sufficient way; and (2) partial or complete omission of other types of information.

Photographic, in other words, no longer denotes a category of images based on a specific mode of production ('capturing', 'recording' or any such coordinate term). It is only a category of images that displays a specific aesthetic distribution. Thus, quasi-photographic images make clear that, irrespective of the term used to define aesthetic distribution (fine granularity, high resolution or simply extreme detail), any attempt to differentiate depiction from visualization is simply a lost cause. Put differently, in the words of Vilém Flusser: 'Take a form, any form, in fact any algorithm that can be expressed numerically. Feed this form via a computer into a plotter. Stuff the form thus created as completely as possible with particles. And there you have it: worlds ready to serve' (1999: 37).

5. Ornament and Interface

What then is the relation between a (viewing) subject and a (viewed) object, if the infrastructure of a quasi-photographic image is simply a mathematical matrix used during image compression? What are the interrelationships between data, image and user? Arguably, the century-old method of geometrical projection has now been incorporated into a new method of calculation. Between the subject and object there now stands a layer called mathematical processing that governs what the subject sees. Between data and image now stand powerful algorithms that govern *how* the user sees.

Is it still possible to separate image from calculation? Can we differentiate between sign and signal, representation and algorithm? William Uricchio argues that representation in the digital age is not obsolete (2011). According to his view, the algorithm does not precede the image, but is rather part of the image. However, algorithms are finite descriptions for infinite sets of actions. This implies that the possible, the probable (and the improbable) are also parts of the image. Thus, the conception of the image as a permanent fixation of meanings must give way to a conception of the image as a network (or, alternatively, a terminal) of meanings.

Thus, the image is no longer a stable representation of the world, but a programmable view of a world (that can be updated on-the-fly, as in the artworks of John Gerrard, for example). It no longer cares to function as a (political and iconic) representation, but plays a vital role in synchronic

data-to-data relationships (and machine-to-machine relationships). The image is not only a part of a programme but also contains its own 'operation code'; it is a programme in itself.

6. Conclusion

The fugitive and transient quasi-photograph is more than just an aesthetic phenomenon. The decision to mould sequences of information as photographs, when taken by the creators of imaging algorithms, is perhaps ornamental but it articulates much more. In acting as mere effect, quasi-photographic images function as sophisticated 'go-betweens' that weave together selected aspects of the physical world with the augmented world of data. They should, in other words, be understood as effect and as interface to the computer, a concession required by our (inferior) human processing capabilities.

Quasi-photographs are, without a doubt, part of a larger reconfiguration of experience and mediation of the world by information technologies. Friedrich Kittler's legacy suggests that the very essence of media has now changed, and irrevocably so. According to this view, numerical representation does more than just turn media into other media (as McLuhan would probably argue). Of course, when media are digitized and become computer data they also become actionable, processable and increasingly more programmable. Computing, argued Kittler, is 'a general interface between systems of equations and sensory perception' (2010: 228). This means that the differences between individual media, and the borders separating them, are erased. Image, sound or text all become mere effects, interfaces for the consumer or simply concessions required by and for the inferior processing capabilities of us human users: 'Sense and the senses become mere glitter' (Kittler 2012: 32).

Moreover, given the levels of programmability available today, computation not only processes, stores and transmits information, it also conflates matter (or energy) with information. In other words, we are experiencing much more than just the mechanization of various languages (textual, audible and visual alike). Quasi-photographs, I argue, demonstrate the extent to which programmability can thwart the very distinction between language and expression, between imaging and image.

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