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Reflecting, Registering, Recording and Representing: From Light Image to Photographic Picture

Abstract

Photography is highly valued as a recording medium. Traditionally it has been claimed that photography is fundamentally a causal recording process, and that every photograph is the causal imprint of the world in front of the camera. In this paper I seek to challenge that traditional view. I claim that it is based on a ‘single-stage’ misconception of the process that defines photographs as mind-independent images and leaves no room for photographic depiction. I explain my objections to that view and propose an alternative, ‘multi-stage’ account of the process, in which I argue that causal registration of light is not equivalent to recording and reproducing an image. The proposed account can explain how photography functions as an exemplary recording medium, without supposing that every photograph is a mind-independent causal imprint of the world. Intervention or non-intervention by photographers is a more complex matter than the traditional view allows. Using the framework of the multi-stage account, I describe three different ways that photographic pictures can be produced.

1. Introduction

Photography is a recording medium. In this capacity it is relied upon for historical archives, scientific observations, forensic evidence, news reports, documentary art, and social media updates. Photography is valued for these purposes because it can produce visual records of features of photographed scenes through a causal recording process.¹ Although the design and operation of the apparatus depend on human minds, the recording process can bypass human intervention. Being a record does not guarantee accuracy – a record can be inaccurate or indecipherable. But when photographs deliver accuracy, they owe this to such a recording process, which likewise grants photography its reputation for reliability, objectivity, and credibility.² Tradition has it that the photographic process allows the world to imprint itself, yielding its own reproduction. The associated notion that photography is a ‘mind-independent’ recording medium has epistemic, aesthetic, and ethical significance, especially in an era of digital technology, machine learning and artificial intelligence.³

¹ For initial purposes ‘photograph’ is a photographic image and photographic images have visual properties.

² See Hopkins (2012) on accuracy, Rini (2020) on reliability, Cavedon-Taylor (2013) on credibility, and Walden (2005) on objectivity.

³ See Carlson (2021) on Deepfake images and Daniel Chávez Heras & Tobias Blanke (2020) on photographic vision in AI.

I call this the idea that photography is *fundamentally* a recording medium. It is the view I wish to challenge in this paper. I will instead argue that photography is only *functionally* a recording medium. Photographs can be records of photographed scenes and fulfil this function in an exemplary way, but it is not necessary that a photograph be a record of the photographed scene. On the fundamental view, every photograph must be a record just insofar as it is a photograph. On the functional view, photography is well suited to produce records if specific, contingent conditions are met, but a photograph can still be a photograph when it does not meet these conditions.⁴

The idea that recording is fundamental to the photographic process, I will suggest, is part and parcel of a ‘single-stage’ view that can be traced to the inception of photography and became orthodoxy among photographers, historians, and theorists. In analytic philosophy it has led to ‘mind-independence’ becoming a defining feature of photographs. A single-stage view supposes that a photographic image is generated during the period when a camera exposes a photosensitive surface to light. This is the view of photography that I will challenge here, proposing an alternative, ‘multi-stage’ account. In the terms of this alternative account, exposure of a photosensitive surface to light is a necessary first stage in the production of a photographic image, but not by itself sufficient. Subsequent process stages are necessary before a photographic image is produced. I shall argue that, as the single stage view of the photographic process and the view that photography is essentially a recording medium, are so closely entangled, once the former is rejected then the motivations for the latter are removed. The claim that photography produces ‘mind-independent’ images is undermined and the ground is also cleared to accommodate an expanded range of photographic pictures.⁵

I proceed as follows. In section 2, I spell out the single stage view and explain its appeal. I also explain the alternative, multi-stage view. In section 3, I explain how the single-stage view motivates the idea that photography is fundamentally a recording medium and consequently the idea that photographs are, by definition, mind-independent images. In section 4, I seek assistance from John Kulvicki’s work on recording and representation, particularly his account of ‘witless’ photographic recording. I suggest that the model – offered by the single-stage account – of an all-in-one record-reproduce event, is a myth. In section 5, I use the multi-stage account to show that alongside witless records, photography can produce ‘witty’, depictive images. Both types have equal claim to be photographs.

⁴ Catharine Abell’s account of the standardisation of the function of photographic processes is a helpful forerunner of this idea. ‘Given a certain scene, most such mechanisms will yield an accurate depictive representation of that scene. This is a purely contingent fact about photographic mechanisms.’ (Abell 2010 p.99). ‘The reliability of photographic processes results from the standardization, not of the processes themselves, but of the functions they perform.’ (Abell 2010 p.98).

⁵ Photographic images need not be representational, whereas photographic pictures must be depictive representations.

2. Single- and Multi-stage Accounts of Photography

Single- and multi-stage accounts of photography share a common starting point before they diverge. The preliminary step in any photographic process is to arrange an array of light. Although open exposure to light can be used to produce a photogram, conventional photographic images begin with light that is channelled through an aperture into a dark chamber – a *camera obscura*. Light arriving at the aperture has been emitted by, or reflected from, surrounding objects, so it is governed by the relative position of the camera.⁶ Inside the camera, light is directed onto a surface to form an array of dark and bright areas of intensity. Lenses and filters can sharply focus the diffuse array to produce an optical light image.⁷

The phenomenon of an optical light image is an entrancing curiosity that inspired and obsessed the pioneers of photography. It is a visual image, with size, shape and location on a surface. It consists of highly detailed, differentiated areas of colour and contrasting tones. It reacts to real-time changes in the scene and the camera, so it can be dynamic or static, but above all it is ephemeral. The view inside a camera obscura is at the same time a view of the outside world – selected, reflected, inverted, scaled, and flattened. People move, shadows deepen, and, at some point, the captivating light image must disappear. The pioneers of photography decided they would compel it to remain – seized, arrested, fixed. However, they were not content to trace a reproduction of the light image by hand. They instead wanted to record the image – by making it autonomously reproduce itself.

Henry Fox Talbot described his invention as ‘fixing upon paper the image formed by the Camera Obscura; or rather, I should say, causing it to *fix itself*’.⁸ A partnership agreement, signed by Joseph Niépce and Louis Daguerre attributed to Niépce the discovery of a new method consisting of the ‘spontaneous reproduction of the images of nature received in a camera obscura’.⁹ Hippolyte Gaucheraud reported that:

M. Daguerre has found the way to fix the images which paint themselves within a camera obscura, so that these images are no longer transient reflections of objects, but their fixed and everlasting impress which, like a painting or engraving, can be taken away from the presence of the objects.¹⁰

⁶ ‘Surrounding objects’ in the widest possible sense, which can include the sun, or distant stars.

⁷ The visual image in a camera obscura is an optical phenomenon: specifically, a real image rather than a virtual image. I am grateful to Nicholas Wade for encouraging me to adopt this terminology.

⁸ Watson & Rappaport (2013) p. 129.

⁹ Fouque (1981) p. 27.

¹⁰ Gaucheraud (1980) p.17.

These, and many similar descriptions of photographic processes, show the emergence of the single-stage view of photography. I will first outline that view and afterwards say more about recording and reproduction.

When an optical light image has formed, it is not a photographic image. A necessary step for generating a photographic image is to expose the light image to a photosensitive surface. Single and multi-stage accounts of photography diverge in how they characterise the process stages that lie between a light image and a photographic image. Both accept that numerous, sequential tasks are required in the overall process. ‘Single’ and ‘multi’ do not indicate some number of tasks to be performed. Rather, these labels are different answers to the question: ‘Within what stage(s) of the production process does a photographic image come into existence?’

‘Single-stage’ applies to any account that is committed – implicitly or explicitly - to answering that a photographic image is created (‘seized’, ‘fixed’, ‘imprinted’, ‘inscribed’, ‘registered’, ‘recorded’) during the period in which the photosensitive surface is exposed to light. The term refers to the notion that the photographic image is created during one single stage of the process: the exposure stage. Single-stage accounts recognise that secondary stages may be necessary to reveal, display or modify the photographic image but suppose that these tasks come after the image has already been created.

Reporting on the Daguerreotype method, one nineteenth century author explained that, during exposure, the light image becomes ‘perfectly imprinted’ on a photosensitised metal plate. At the end of the exposure time there is no visible image, yet the image has already been affixed to the plate invisibly. All that remains is to make the invisible image visible by applying mercury fumes.

The image of immobile objects becomes perfectly imprinted on the plate although this image is yet invisible [...]. Before application of mercury there does not exist any distinct image, although these images have already been set down and set down forever.¹¹

This remains the template for twenty-first century single-stage accounts, which are committed to the notion that a photographic image exists once a photo-sensitive surface has been exposed to light from the scene. An image created during exposure exists as an invisible latent image on undeveloped film, or as a digital file, before it is subsequently developed, printed, or screened.¹²

¹¹ Isid B. (1839).

¹² For example, as described by Christy Mag Udhir: “taking a photograph” standardly indicates performing a certain relevant action (for example, tripping a camera’s shutter release) initiating a certain relevant process (for example, photochemical, photoelectrical) over a certain relevant base (for example, film, plate, file), onto which some (latent or visible) image is thereby produced (or encoded) and from which further certain relevant

The multi-stage account does not simply start with the single-stage view and add another stage.¹³ Rather, it re-conceives how to think about the relationship between two process stages and offers a new way to understand photographic images. A multi-stage account denies that a photographic image comes into existence during an exposure stage. It acknowledges that the exposure of light to a photosensitive surface is a distinctive causal phenomenon: a ‘photographic event’.¹⁴ But this event is not the production of a photographic image. During the photographic event there is causal registration of light that forms the optical light image. This is causal registration of the light, not causal registration of the image. The image does not cause material changes in the photosensitive surface: only the light causes material changes. In his discussion of Kepler’s theory of vision, Jonathan Friday explains that Kepler confused the efficient cause of vision with a formal cause:

What causes vision is the irradiation of the retina according to certain optical principles, and that array of light has the form of a picture. It makes perfect sense to suppose that the pattern of irradiation is a picture, but not to suppose that vision is caused by the formation of a picture.¹⁵

Kepler’s mistake must be avoided for photography. It would be misleading to imagine that an image has a causal effect on a photosensitive surface.¹⁶ An image ‘reproducing itself’ cannot be the basis of the photographic process.

In photo-chemical technology silver halide emulsion forms micro-specks of metal by reacting to varying intensities of light distributed across a surface. Material changes in the emulsion tally the quantity of light during the photographic event and the result is a register of these changes. When the photographic event ends, only a photographic register exists. No image yet exists, visible or invisible.¹⁷ To create a photographic image, another stage is necessary: the photographic register must undergo chemical treatments to render a stable visual image. Image rendering does not reveal an already existing image – it uses a photographic register to bring a visual image into being and some features of the image will be determined by the image rendering process. After the stages of registration and rendering are complete, a photographic image then exists.

products may subsequently be developed or processed (for example, negatives, prints, slides, and so on)’ Mag Udhir (2012) pp. 37-8.

¹³ It does not simply conjoin the distinct exposure and development stages that are already acknowledged by the single-stage account. This would leave intact the idea that an image is recorded and reproduced during exposure.

¹⁴ The multi-stage notion of a photographic event is not the same as the single-stage notion of an ‘exposure’.

¹⁵ Friday (2002) p. 8.

¹⁶ Relatedly, the light image is a reflection on a surface, but the reflection is not what is causally registered.

¹⁷ This describes the ‘developing out’ method. The ‘printing out’ method is discussed in Wilson (2021).

Photo-electrical processes, likewise, do not produce an image during an exposure. Individual pixels of an electronic sensor tally the light they receive as electrical charge, then deliver electronic signals to produce a digital file.¹⁸ A software program is required to render a visual image from a digital register. If the step from light registration to image rendering is automated to occur in a fraction of a second, production of the photographic image can seem simultaneous with the exposure time – creating the impression of a single-stage account. But this step in the process can be interrupted, and it is straightforward to acknowledge – in line with the multi-stage account – that the digital file is not a photographic image.

Single- and multi-stage views each seek to accommodate photo-chemical and photo-electrical production processes, and all varieties of photographic technology: from the production of Heliographs and Calotypes through to Polaroid and digital photography. The single-stage view originated in early photo-chemical photography and has retained its influence in the digital era, even though the underlying idea is no longer a perfect fit. The multi-stage account emerged in an era of photo-electrical photography, where it carries plausibility, but it faces a challenge to overturn the orthodox account of photo-chemical processes. It might be tempting to classify photo-chemical photography as single-stage and photo-electrical photography as multi-stage, but this would not be accurate. The multi-stage account is correct for both. The single-stage view is a deep misconception of photography, not an alternative type of photography.

The arrival of digital photography does not spell the end of the single-stage orthodoxy, because the view has an influential legacy. During its period of unchallenged dominance, the single-stage view installed a normative principle that is used to define photographs: the principle that a ‘pure’ photograph (a ‘strict’, ‘ideal’, or ‘authentic’ photograph) is necessarily a visual image that has acquired its properties mind-independently.¹⁹ A commitment to mind-independence can seem to sit well with highly automated digital technology, even though commitment to this view is, at heart, a commitment to the single-stage view of photography. To fully understand how these definitions of photography as mind-independent are the legacy of the single-stage view, it will help to turn to the idea that photography is fundamentally a recording medium.

3. Photographic Recording and Reproducing – the ‘Fundamental’ view

Reproductions need not be the product of a recording process: it is possible to produce reproductions by hand, guided by conscious control. But the key attraction of photographic reproduction is the prospect of a causal recording process that does not rely on conscious control. A footprint in the snow reproduces the outline shape of a boot through a causal recording process. When the boot shape is causally imprinted in the

¹⁸ Hopkins (2012) pp 723-4 discusses the implications of interpolation in photo-electrical technology.

¹⁹ For examples see Scruton (1981), Currie (1999), Friday (2002) and Hopkins (2012).

snow it leaves behind a reproduction of that shape. The physical imprint is at one and the same time the recording of the shape and, also, the reproduction of the shape. This is a mind-independent, all-in-one, model of causal recording. The single-stage view makes the error of using impression as a model to explain the production of a photographic image.²⁰

In photo-chemical technology, recording and reproduction has been conceived of as an all-in-one process. The camera obscura image is recorded in the photosensitive surface and the photographic image is none other than a reproduction of the camera obscura image. This combination of ideas explains why photography appears to be fundamentally, rather than functionally, a recording medium. The view can be traced back to the pioneers of photography who explicitly attempted to ‘copy’, ‘record’ and ‘reproduce’ the camera obscura image.²¹ Reports of the invention of photographic processes repeatedly feature two interrelated ideas: the first is that the camera obscura image reproduces itself; the second is that the photographic image has created itself autonomously. These two ideas fit together: the ephemeral camera obscura image reproduces itself by forming a stable, visual photographic image; or, put the other way around, the photographic image autonomously creates itself in the action of a camera obscura image spontaneously reproducing itself.²² In effect, the reproduction of the camera obscura image and the production of the photographic image are two descriptions of one event.

The initial technical challenge of photography was to record and reproduce the light image. Early accounts make it clear that a photographic image is considered a reproduction of the light image. But, before long, typical accounts began to gloss over the intermediary role of the light image and treated the photographic image as a reproduction of the scene before the camera. Talbot, for example, claimed that Laycock Abbey was the first building in history to have drawn its own picture.²³ According to Rudolph Arnheim, ‘The fundamental peculiarity of the photographic medium’ is the fact that ‘the physical objects themselves print their image by means of the optical and chemical action of light’.²⁴ Robert Hopkins observes that ‘The idea of allowing the world to form its own image by a process of imprinting is central to photography’s self-conception.’²⁵ Turned around, this idea is found in the everyday notion that

²⁰ ‘Calotype’ and ‘Daguerreotype’ are terms derived from ‘typos’ – an impression.

²¹ In Wilson (2021) I describe variations of this view.

²² Strictly speaking, a camera obscura image only reproduces the part of itself that falls onto a photosensitive surface. The camera obscura image is the circular base of a cone of light and usually extends beyond the area of the flat, straight-edged photosensitive surface.

²³ ‘This building, I believe, to be the first that was ever yet known *to have drawn its own picture*’ Talbot (1839) p. 46 - emphasis in original.

²⁴ This is quoted by Kendall Walton in connection with his theory of photographic transparency (Walton 1984 fn. 18)

²⁵ Hopkins (2015)

photography records the appearance of the world in front of the camera. The original idea that photography reproduces a light image would seem alien to most people.²⁶

This is the conception of recording that lies behind many philosophical discussions of photography. The idea that photographs are records of the photographed scene is commonly invoked to draw a fundamental distinction between photographic and non-photographic images, most evidently in discussions about the epistemic value of photography, but also found in aesthetic debate. When Roger Scruton constructs a contrast between the logical ideals of painting and photography, he claims that the 'ideal photograph' has a merely causal relation to its subject, so it is a 'record of how an actual object looked'.²⁷ Gregory Currie claims that 'A camera records what is in front of it, not what the photographer thinks is in front of it'.²⁸

The idea that, fundamentally, a photograph is a record that reproduces features of the photographed scene is aligned with theories that make mind-independent, or belief-independent, counterfactual dependence a defining characteristic of photographs. A central claim is that determinate features of photographs are counterfactually dependent on determinate features of the scene because those properties were transferred via a mind-independent (re)production process. Versions of this idea feature in work by Currie on visible traces, Hopkins on accuracy, Scruton on aesthetic scepticism, Walton on transparency, and Walden on objectivity.²⁹ Photographic images that fall short of this threshold are not considered photographs in a full sense or they only partially exhibit the qualities – transparency, objectivity, accuracy – that a full exemplar would possess. Theories with a commitment to mind-independence have collectively established a tradition that carries normative force: any genuine photograph, a photograph strictly defined, is necessarily a mind-independent image of the photographed scene. Mind-independence is expected in any adequate definition of photographs or discussion of the fundamental characteristics of photographs.

The pioneers of photography viewed an all-in-one record-reproduce event as the fundamental basis for the photographic process. This established the single stage view as orthodoxy. The photographic recording process was described, variously, as a natural discovery or a mechanical invention, or a combination of both. Crucially, it was considered an entirely causal process that bypassed the conscious control of the photographer. On this view, a photographic image is necessarily autonomous rather than authored. This idea has evolved into the normative principle that mind-independence must be specified in any adequate definition of a photograph. The idea that photography is fundamentally a recording medium comes as a package with this normative constraint on how photographs are to be defined.

²⁶ I mention implications of this idea in fn. 35.

²⁷ Scruton (1981) p. 579.

²⁸ Currie (1999) p. 286.

²⁹ Walden (2005) fn.3.

4. Recording, Reproducing and Representing

In this section I want to examine the notions of ‘recording’, ‘reproducing’ and ‘representing’. Assorted claims about photographic recording have thrown up a lot of dust, especially as ‘record’ and ‘recording’ can be terms for actions as well as objects. A photographic image – and sometimes the object carrying the image – is at times called a recording, reproduction, record, or representation, as though these words are interchangeable; but they are not equivalent terms. To restore a clear view, I will turn to John Kulvicki, who distinguishes recordings from representations and specifies defining characteristics of recordings:³⁰

While representations have an intentional character, recordings are *relational*. The relation between a recording and what it records is *witless*, and it allows *playback*.³¹

‘Witless’ means that ‘the process is causal, and as long as everything is working properly, no wits are required. [...] Wits might be pre-requisite to making such machines, but recording processes don’t require those wits’.³² ‘Playback is a witless process whereby that which is recorded can be reproduced’.³³

Although an object or image is commonly called a ‘recording’, a recording is a relation, not a particular kind of object. A recording is a state of affairs that relates the event it records to a reproduction of that event. Specifically, a recording supports the reproduction of an abstract pattern: it relates one instance of pattern to another instance of the same pattern.³⁴ Descartes may be the source of a recording, but it is not possible to record Descartes because he is a unique object that cannot be reproduced. It is, however, possible to record a pattern of light and dark caused by an object or scene and to reproduce that pattern. A photograph of Descartes would reproduce the pattern of light and dark that was recorded when he stood before the camera.

Using Kulvicki’s account of recording with the multi-stage account can provide a better understanding of photography as a recording medium. For example, orthodox accounts of photography have promoted the idea that a photograph is a causal imprint of the photographed scene and overlooked the role of the light image. The multi-stage approach attends to the relation between the camera and the scene in forming the light

³⁰ Kulvicki carefully acknowledges ideas from John Haugeland that he has adopted or adapted, but the following account is his own position. He notes that Patrick Maynard is the only one to have made a similar notion central to his discussion of photography. (Kulvicki 2018 fn. 1)

³¹ Kulvicki (2017).

³² Ibid.

³³ Ibid.

³⁴ Not all abstract patterns can be recorded. ‘We can record patterns of features: features that can enter into causal relations and thus participate in witless processes.’ Kulvicki (2017). See Kulvicki (2018), section 2, for more on patterns.

image. If a photosensitive surface is completely exposed, directly to a scene, without a light image, the result is an entirely uninteresting pattern, that has no use as a record.³⁵ Management of the light image is vital to produce the rich pattern that has utility and interest once it is recorded and reproduced in the way Kulvicki describes.

Kulvicki discusses the distinction between recording and representation. The visible pattern witlessly reproduced by a photographic recording process may be taken up as the intentional content of a representation (a photographic portrait of Descartes), but witless recordings can be independent of representation (Descartes caught by a speed camera), and many representations have only intentional content, without recorded content (a painted portrait of Descartes).³⁶ Photography was conceived as a technology for natural and mechanical reproduction as well as a technology for producing pictorial representations, and this interplay of functions has a complex developmental history.³⁷ Kulvicki does not suppose that photographs are fundamentally representational, instead he has a functional account that explains how some but not all photographs acquire intentional content and serve as representations.³⁸ However, it is implicit in his account that every photograph is the product of a recording process. This would seem to endorse the view that photography is fundamentally a recording medium – a view I am challenging here – but his position need not point to this conclusion, as it can be extended to support a functional, multi-stage account.

Kulvicki acknowledges two types of recording: an all-in-one process where the recording is already a reproduction, and a process where reproduction is one-step away from the recording. He characterises digital photography as an example of the latter.³⁹ I suggest that he should also say the same about photo-chemical photography. However, he uses the Daguerreotype as a paradigm of all-in-one recording-reproduction:

In Daguerreotypes, the pattern burned into a sheet of silver records a pattern of light and dark, and also serves as a playback of that pattern, because it *is* the

³⁵ *The Day Nobody Died* (2008) by Adam Broomberg and Oliver Chanarin demonstrates this conundrum. Each action-photograph, created while the artists were embedded as war correspondents in Afghanistan, was produced by exposing 6 metres of a roll of photosensitive paper in daylight for 20 seconds. By avoiding the artifice of an intermediate light image, each photographic exposure should technically count as an unmediated recording of the entire scene – in theory recording more than any standard photograph. Yet, absent any selectively formed light image, the recorded and played-back pattern completely lacks any rich detail that would make it useful as a visual record of the scene.

³⁶ Sceptics have claimed that a photograph can only carry representational content by reproducing a pre-existing representation, rather than producing a representation (Scruton 1981). That problem is compounded if photography is thought to merely reproduce ‘natural images’ found in the camera obscura.

³⁷ See especially Patrick Maynard (1997).

³⁸ Kulvicki (2017) has a more extensive discussion of representations that are modelled by recording processes.

³⁹ ‘Sometimes, the recording is one step away from playback, as with wax cylinders and jpeg files. The recording in these cases is not the same pattern as that which gets recorded, but the right witless apparatus allows one to reproduce that recorded pattern.’ (Kulvicki 2017). ‘A digital camera saves a file which can then be used to create an image.’ (Kulvicki 2017).

pattern of light and dark that was recorded. Just look, and you see, reproduced, the pattern that caused it.⁴⁰

An all-in-one recording-reproduction account of Daguerreotypes would be correct if the single-stage account of photography were true – but it is not. Like digital images, Daguerreotypes are products of a multi-stage process. The photographic image is not a reproduction that was created when recording occurred as, after the photographic event, no image is visible. The image that serves as a visible playback of the recording is only created thanks to a contingent image-rendering process. The significance of this step was not apparent in reports by Daguerre, Talbot, and others, who believed that an invisible latent image and the visible patent image were one and the same image.⁴¹ Talbot misleadingly claimed that during the image-rendering stage, an invisible latent image ‘*developed itself* by a spontaneous action’.⁴² This would certainly count as witless playback of a recording, but it is not proof of all-in-one recording-reproduction.

In the following section I will use the multi-stage account to argue that photography is only functionally a recording medium – just as it is functionally rather than fundamentally a representing medium. I will extend Kulvicki’s account to argue that many photographic images are witless reproductions from recordings, but not all. Photography properly includes images that are ‘witty’ as well as those that are witless.

5. Photographic Recording and Reproducing – the ‘Functional’ view

According to the multi-stage account, recording and reproduction are not all-in-one within the exposure stage. The photographic image does not generate itself autonomously when a photosensitive surface is exposed to light. Instead, registration of light takes place during the photographic event and, once an image is rendered from the register, the photographic image can, in some cases, be considered a recorded reproduction of the light image.⁴³ But whether it is or is not a record is an open question – it will be settled by facts about how the register was produced and how it was used to render the photographic image. If the process has been set up in an appropriate way and end-to-end stages of the process are fully witless, the result is a record.⁴⁴ Otherwise, it is not. Nothing in photography makes it fundamentally the case that photographic images are records. It is a contingent, functionally determined matter.

⁴⁰ (Kulvicki 2017).

⁴¹ Daguerreotypes particularly reinforced the single-stage idea because the object used to register light at the first stage is the same object used to display the rendered photographic image at a later stage.

⁴² Watson and Rappaport (2013) p. 189.

⁴³ The key issue for most people is whether it is a record of the photographed scene, but this can only be properly understood if the role of the light image is acknowledged.

⁴⁴ A lot can be said here about norms and standards that would have to be met to ensure that a process has functioned witlessly end-to-end. Abell (2010 and 2018), Hopkins (2015) and Walden (2012) contribute significantly to this discussion.

A photographic image is a photographic record when the image has been reproduced by witless light registration and witless image rendering. Neither process can be correctly described as ‘mind-independent’, although following Kulvicki, for a recording or playback process to be witless, a system that bypasses human intervention is necessary. The single-stage view can assume that, so long as everything during the exposure stage is witless, the production of a photographic image is fundamentally witless. The multi-stage view recognises that a witless photographic event does not determine that the photographic image is a witless playback or not. Even if the first stage is witless, there are two possibilities: there may be a witless second stage, in which case the photographic image is an entirely witless playback. Or the photographer may intervene in the second stage, in which case the photographic image is not an entirely witless playback. I will introduce the term ‘witty’ to characterise photographic process stages that are not entirely witless.

Some definitions are useful here. A recording is a relation between two instances of a pattern. Necessarily, it must support a witless playback (reproduction) of the recorded pattern, otherwise it is not a recording. Registration is a causal relation between a distribution of light and effects caused by the light. It is not a relation between instances of a pattern. A register can support witless playback and thereby serve, functionally, as a recording for a reproduction. But a register can also be used to create an image that is not a witless playback. It is a register in both cases, but it is only a recording in the former case.⁴⁵ It is understandable that photography has prioritised the recording function and privileged those cases where technology has been successfully designed to fulfil that function. Norms and standards have been established to ensure success at every process stage.⁴⁶ But the undesirable legacy of single-stage orthodoxy is that failure to live up to the norms of being a recording has been treated as failure to live up to the norms of being a photograph.

The multi-stage account does not support the normative principle that mind-independence must define the paradigm case of a photographic image. It recognises four schematic possibilities: i) witless registration followed by witless rendering; ii) witless registration followed by witty rendering; iii) witty registration followed by witless rendering; and iv) witty registration followed by witty rendering. The first is entirely witless and the other three are witty in various ways, but the outcomes of all

⁴⁵ When I first introduced the multi-stage account, I described the photographic event as a ‘recording of the light image’ Wilson (2009a and 2009b), but subsequently redescribed it as ‘causal registration of the light that forms the optical light image’ (Wilson 2021). The present argument shows why I considered it important to refine my choice of words. The multi-stage account has become the basis for a view collectively known as the ‘New Theory’ of photography and has been discussed, developed and applied by other thinkers (Anscomb 2018, Abell 2018, Atencia Linares 2012, Costello 2017, Lopes 2016). New Theorists and critics have characterised the photographic event in various ways, not all using the same terms. My contribution here is not an attempt to bring uniformity to the discussion. Settling on exact terminology – registering or recording – is not the main point; what matters is how best to elucidate that a photographic event – the registration of light – does not by itself constitute the production of an image.

⁴⁶ See Hopkins (2015).

four modes of production count equally and fully as photographic images. Hence, it would be a mistake to insist that mind-independence is a defining feature of a photographic image. A witty self-portrait by Vincent Duault (Figure 1) will allow me to illustrate these various modes of production.

i) Witless registration followed by witless rendering

Duault sat in front of the camera. Light reflecting from his face was channelled to produce an array and focussed to form an optical light image, reflected inside the camera. A photographic event occurred: light arriving at the photosensitive film surface caused material changes in the emulsion. When the photographic event ended, a register, consisting of the material changes was removed from the camera. The register was not a record, reproduction, or a representation. The register was immersed in developing fluid which caused microscopic catalysts to grow into large grains of silver and produce a visible image. The photographic image was chemically fixed to halt the rendering process. The resultant 'negative' is a photographic record: an instance of a pattern that was witlessly recorded, then reproduced by a witless playback. However, that record is not the image we see here. Photo-chemical methods with a negative-positive process require two photographic events and two image-rendering steps. The first register, produced in camera, is rendered into a negative photographic image. The negative is used in the darkroom to stage a second photographic event.

ii) Witless registration followed by witty rendering

Inside a darkroom, the same negative image was placed in an enlarger. A second optical light image was formed, and a second photographic event occurred: the quantity and distribution of light shining through the negative was registered by causal changes in the emulsion of a sheet of photosensitive paper. The production of this register was also a witless process. It would be possible to immerse that register in developing fluid and produce a visible image. Although the playback pattern would invert the dark-light tones of the negative image, it would still be an instance of a pattern witlessly recorded during the photographic event and reproduced during standard image rendering.

However, Duault chose not to render the image using this standard method. Instead, he selectively finger-painted developing fluid over the surface of the register, layered in some places and large gaps untouched elsewhere. (See close-up details in Figure 2). He then fixed the register in a stop bath to prevent further change. This is an example of witty image-rendering in every sense of the word. The result is not a witless reproduction of a recorded pattern, it is a photographic picture.

A restrictive definition of photography – which includes mind-independence as a normative condition of an image counting as a photograph – must say that this self-

portrait is not a photograph. Some theories would classify it as a drawing or painting.⁴⁷ The multi-stage view can claim that this is categorically a photographic image, without claiming that it is a record of the photographed scene.

iii) Witty registration followed by witless rendering

A photographic picture can be the product of witless light registration combined with witty image rendering. However, witty light registration is also possible. It is commonly supposed that techniques of ‘dodging and burning’ are interventions at the image-rendering stage of the process. These are considered techniques for post-production manipulation or enhancement of an image. That impression is another misconception caused by the single-stage view. In fact, dodging and burning take place during the occurrence of a photographic event.

Enlargement printing requires light to be projected through the negative and focussed to form an optical light image, reflected on the photosensitive surface. The negative provides a static scene – unlike the dynamic scene in front of a camera – but the optical light image is still temporally active as it is causally responsive to changing light conditions. Dodging is a technique for reducing the amount of light arriving at specific areas of the photosensitive surface. Burning is a technique to increase the relative amount of light received in a selected area. These commonly used techniques allow the photographer to consciously control how light is registered and give the photographic register intentionally determined features.⁴⁸ A photographic event can be a witty process; it is not necessarily a witless process.

A witty photographic event can be followed by witless image-rendering: after dodging and burning a register can be put through a standardised, perhaps automated, development process that lacks witty intervention by the photographer.

iv) Witty registration followed by witty rendering

I have claimed that the photographic event occurring in a darkroom can be witty as well as witless. The same is true for all photographic events, whether photo-chemical or photo-electrical.⁴⁹ The formation of an optical light image through judicious positioning of a camera and adjustment of settings and controlled management of the registration of light can be the basis of a photographic event that is either witty or witless, followed

⁴⁷ Scruton (1981) is one example.

⁴⁸ Paloma Atencia Linares (2012) has explained how certain darkroom techniques, such as layering two negatives in the enlarger, count as photographic means for producing a photographic image with fictional depictive content.

⁴⁹ Gjon Mili’s practice of ‘light drawing’, particularly in partnership with Pablo Picasso, is a good example of dodging and burning taking place outside the darkroom.

by image-rendering of either kind.⁵⁰ Being entirely witless is an all-or-nothing matter, but being witty comes in degrees. Heated discussions must inevitably continue about how far it is possible for a photographer to make interventions that are salient in the final image.⁵¹ The multi-stage view does not settle the matter, it simply invites such discussions to take place freely. Although photographers are often keen to let the image speak for itself, the multi-stage view shows that the testimony of photographers is invaluable for ascertaining whether or to what extent the production of an image was witty or witless in both the registration and rendering stages.⁵² This is not only true for depictive portraits, but also speed camera records. Most importantly, it extends to every conceivable use of photography: social, artistic, scientific, forensic, or reportage.⁵³

In arguing for a functional account of photography, I am in good company with a diverse range of functional approaches offered by others.⁵⁴ But there are significant areas of disagreement and there remains much to discuss. For example, Hopkins argues that photographs support ‘factive pictorial experience’ because they are necessarily accurate, but he specifically does not claim that photographs are *fundamentally* accurate. Instead, he claims that *properly functioning* photography produces photographs that support an experience of accurate seeing-in.⁵⁵ This position lies in the functional camp, rather than the fundamental camp, but it is significant that he appeals to an idealised conception of the norms that set the functional standard.⁵⁶ These idealised norms are descended from the orthodox expectation that photographs should be defined as mind-independent. Elsewhere, Hopkins acknowledges that his claims are limited to the category of ‘authentic’ photographs that fit the traditional self-image of photography as an ‘imprinting’ process.⁵⁷ If the multi-stage account of photography is correct, no photography genuinely fits the self-image of all-in-one imprinting, and photographic images do not have to meet this standard to be considered authentic. That said, if the norms that set the functional standard can be appropriately explained, it should still be possible to argue that some photographs are sufficiently accurate to support factive pictorial experience. The same is true for reliability, objectivity, credibility, and any other qualities that would explain why photography is highly valued as a recording medium.⁵⁸ Addressing the legacy of the single-stage view clears the way

⁵⁰ See Lopes (2016), Costello (2018), Anscomb (2018) and Morris (2020) for informative descriptions of photographic techniques that enable photographers to exert control over the photographic image.

⁵¹ Wiesing notes that the products of abstract photography need not be pictures, or even images (Wiesing 2010 p. 77)

⁵² Technical information provided by camera metadata is another factor.

⁵³ *The Day No-one Died* (2018) also illustrates this point. See fn. 35.

⁵⁴ Abell (2010 and 2018), Anscomb (2018), Benovksy (2011), Hopkins (2012), Lopes (2019), Maynard (1997) and Walden (2005).

⁵⁵ Hopkins (2012) p.729.

⁵⁶ ‘To identify an experience that is factive, I need to appeal not to the norms that actually govern photographic systems, but to some idealisation of them.’ Hopkins (2012) p. 728.

⁵⁷ Hopkins (2015).

⁵⁸ See Anscomb (2018) and Abell (2018) for constructive work in this direction.

for better understanding how photography functions as a recording medium – and better understanding when it does not.

6. Conclusion: Exposing the ‘Photo in the Machine’

I claimed at the outset that it is orthodoxy that photography is fundamentally a recording medium, and there is truth in this generalisation. However, under cross-examination, few if any would commit to a full-blooded version of this view: perhaps no-one would insist that, without exception, every product of the photographic process is necessarily a record of the photographed scene. This does not mean I have targeted a straw man; rather I have revealed a ‘man’ made of straw. My aim has been to expose significant misconceptions that arise if photographic recording is treated as the paradigm for defining a photograph. The truth in the generalisation is the widely held assumption that only those photographic images that are records count as photographs. I have argued that a multi-stage, functional, account of photography can acknowledge the importance of photographic records without privileging that category over photographic images that are not records of the photographed scene.

‘Photograph’, often contracted to ‘photo’, is a generic term that has been used to refer to various objects that display the visible effects of being marked by light.⁵⁹ It might seem that ‘photograph’ is a useful term to apply to a wide category of items, produced by different technologies and covering a range of different applications. On the contrary, in analytic philosophy of photography and beyond, ‘photograph’ is an unhelpful term that conflates separate process stages, and obscures different technological functions and practical techniques.⁶⁰ Most significantly, it has evolved into a term with normative force that treats a narrow range of cases as a restrictive standard, by treating contingent, functional factors as necessary, fundamental conditions. This has led to epistemic dogmatism and aesthetic scepticism.⁶¹ ‘Photograph’ carries an inheritance of mythical claims about a magical-mechanical process and the ‘photo in the machine’ is quite literally ‘black-box thinking’: recording that supposedly takes place as an all-in-one process inside the camera obscura.⁶² To understand how photography functions as a recording medium, it is necessary to expose what actually goes on inside and outside the black box: to recognise different roles played by the optical light image, the photographic register, the photographic image, and the photographic picture.⁶³ Only then is it possible to develop a full picture of the witty and witless capacities of the photographer.

⁵⁹ Maynard (1997) has a detailed account of why not every item marked by light in a photographic process is a photograph.

⁶⁰ Jiri Benovsky (2011) gives a metaphysical analysis that addresses similar concerns and concludes that photographs should not be treated as a fundamental ontological category.

⁶¹ Argued in Phillips (2009b).

⁶² The category error consists in categorising a photographic register as a photographic image, perhaps arising because the ambiguous term ‘photograph’ has been applied to both.

⁶³ The multi-stage approach is also applicable to sound-recording and would deliver similar benefits.

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Fig. 2 © Vincent Duault (2018). Reproduced with permission.

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Figures



Figure 1 Fragmentary silver halide development. Original photograph, by Vincent Duault: "Self-portrait (2018)," from the series *Resurgences*. © Vincent Duault, used by permission.



Figure 2 Close-up detail of Fig. 1. © Vincent Duault, used by permission.