

THE EPISTEMIC PROVINCE OF PHOTOGRAPHY

Inés Nicole Echevarría de Asis

**A Thesis Submitted for the Degree of PhD
at the
University of St Andrews**



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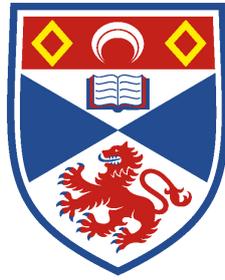
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Inés Nicole Echevarría de Asis



University of
St Andrews

This thesis is submitted in partial fulfilment for the degree of
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Abstract



This thesis argues that photographs enhance the repertoire of seeing the way eyeglasses, microscopes and telescopes do. This kinship is based on these devices sharing a feature called *transparency*. Transparent devices facilitate visual information about objects without interrupting the causal link between the object and our eyes, and do so by maintaining a belief independent and similarity preserving counterfactual dependence on that object. Handmade pictures also offer visual information about objects, but because handmade pictures depend on the perceptual experiences of their makers, they interrupt the causal link between the object represented and our eyes. Consider how a drawing can represent the misperceptions and hallucinations of its illustrator, but in contrast, photographs do not reproduce the contents of hallucinations or misperceptions had by their photographers. I use transparency to map the epistemic province of photographs, arguing that photographs are not just ontologically similar to microscopes and telescopes, but also *epistemically* akin to them, –perhaps even more than they are like other picture types. This is illustrated by two further comparisons. The first is technological: while cameras define the information scope of photographs, handmade pictures are not subject to pre-sets that strictly limit their representational scope in the same way. The second comparison shows how photographs and handmade pictures are subject to different sceptical hypotheses: handmade pictures are susceptible to scepticism about their illustrator, –i.e., as we might question the credibility of someone giving testimony– but photographs are not beholden to scepticism about their photographer. I conclude with a proposal on the epistemology of photography, where contrary to the character of other picture types, photographs provide genuine perceptual knowledge about objects.

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I, Inés Nicole Echevarria de Asis, hereby certify that this thesis, which is approximately 67,586 words in length, has been written by me, and that it is the record of work carried out by me, or principally by myself in collaboration with others as acknowledged, and that it has not been submitted in any previous application for a higher degree.

I was admitted as a research student in September 2008 and as a candidate for the degree of PhD in September 2008; the higher study for which this is a record was carried out in the University of St Andrews between 2008 and 2015.

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Dedication



for J., G., & I.



figure 0.1: untitled drawing from a previous draft by G. and I.

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INTRODUCTION



Thesis Scope, History, Definition, Chapters

The philosophy of photography is still in its adolescence. Cameras, inclusive of a variety of their prototypes and photographic devices, only began to take form in the early 19th century, let alone be available for everyday snapshooting. Obviously, only after their relatively recent invention could theories about photographs begin to shape. Now philosophy of photography is gaining interest in tandem with the development of the technology it circumnavigates. We learn, make decisions, and expand our horizons from looking at photographs all the time. This thesis is dedicated to that special province of knowledge we gain from looking at photographs.

Philosophical theories of photography emerge from a variety of problems that stem from the following issues and their cousins. Some (but not all) of the concerns that motivate philosophy of photography may address photography's place in the arts (aesthetics), the nature of photography and film (ontology), and the extent of photographic information, or their function as evidence (epistemology), amongst many other issues. The provenance for this thesis can be sourced to these latter two types of philosophical concerns, somewhat in tandem. To illustrate, this section provides some prototypical questions for the philosophy of photography, later specifying the most relevant questions to my research. These include:

1. Can photographs be artworks?
2. Why are they so powerful?
3. In what sense are they realistic?
4. How are they like and unlike paintings?
5. Why do we trust them for evidence?
6. How are they objective?
7. How are they truth-bearing?
8. What distinctive problems, if any, do digital photographs generate?
9. What is their so-called 'mechanical' nature?
10. What is a photograph?

Some of these questions can be investigated in combination, and some individually with equal respect to the aesthetics, ontology and epistemology of photography. The first four can be understood as aesthetic questions because they are concerned with what constitutes an artwork: whether photographs are artworks in virtue of similarity to other artistic pictures; what an artistic medium can or cannot be; what aesthetic realism consists of and how photographs might manifest in accord with the genre; and so on. With respect to these questions, one attends to the features of photographs that decide their aesthetic merit, and I will not be attending to the aesthetic questions about photographs in this thesis. Nonetheless, versions of the 3rd and 4th questions are important for an epistemic analysis too, as we will see shortly.

The following four questions have a more explicitly epistemic tone as these pay particular attention to the way photographs are informative: how do we obtain knowledge from photographs (e.g., learning from textbooks and making judgements from advertisements); why do we trust them as evidence of something (e.g. crime scenes, celebrity scandals, etc.) and moreover, to document special events in our lives (e.g. the growth of our children, weddings of loved ones, meeting David Bowie, etc.); and do digital pictures undermine that trust because of the prevalence of their manipulation?

Lastly, the bottom two questions from the above list are most obviously related to the ontology of photographs. Defining what constitutes a photograph, –i.e., what it is, where it comes from, what distinguished it from other things– can tell us something about what we learn from them. Nonetheless, there is some discrepancy on the definition of a photograph: even if we are in consensus about what the best dictionaries have to say, a more complex definition proves more difficult to agree upon. More on this will be discussed in §2, and reinforced in later chapters. Because of the relatively sparse scholarship on philosophy of photography, there is a lot of space for growth in all directions. Thus, the main function of this introduction is to map out how the thesis will chart the epistemic province of photography.

§1 A brief history

Legend has it that the introduction of still and moving photographic pictures to public eyes produced startling effects on their viewers. Without the understanding of the technology what they beheld, audiences were struck by the uncanniness of the photographic image, still and moving alike. One remarkable story is the famous 1896 screening of the Lumière brothers film, *The Arrival of a Train at La Ciotat Station*, in Paris: the film depicted a train approaching and the sight of the film in effect, made the audience panic and scramble to get out of the way.¹ As ridiculous as this may seem at first, one must keep in mind its plausibility: without having any previous acquaintance with film, and unwitting as to the nature of what would appear before them, the audience would not have the background knowledge to psychologically prepare them for the train scene. Whether this story is fact or folklore, anyone who has tried film viewing with the 3-dimensional effect, or experienced an Omni-max cinema, can attest to the power of the film experience even with the knowledge of the fact that the sensations caused are only by some illusion or special effect. Moreover, we can attest to the fact that film experiences generate genuine somatic responses in their audience, such as nausea, terror, gasping for air, shirking from oncoming objects, and this further speaks to the power of film.

Likewise, in the early days of photography, looking at photographs sometimes made its viewers feel unsettled for a variety of reasons, often because the content itself was grotesque, but not always. Such an intimacy with the grotesque was, and still is, unsettling – consider for example, the photojournalism documenting the casualties from raids on Gaza, or those from Typhoon Yolanda. Such images can haunt one's thoughts for years. Another cause for disturbance was the eeriness with which photographs realistically captured images of people: while on principle viewers would have liked to reacquaint themselves with their late relatives, such intimacy with the dead was simply more than they were prepared for. Various forms of photographs have even been rejected for religious reasons, as they were (and still are) feared to hold mystical powers. In cultures where mirrors are believed to bind or confuse unattached spirits, photographic processes like the daguerreotype (where one's image is imprinted on a mirror plate) were considered

¹ Lumière 1896.

invasive to one's soul. In some superstitions, being photographed was something to be afraid of, as it facilitated the robbery of one's soul.²

That was then. Now we know a little more about how photographs are made and their presence in daily life is commonplace. We know at least enough to understand that we are not dealing with a creature of magic, but nonetheless, the photograph is powerful. So much so that we generally believe in photographic content in ways we do not believe of other pictures, like paintings and drawings. Enough so we can make choices according to photographs we see –e.g., to choose one item on the picture menu over another, pick a travel destination in a brochure, or even to select a house for purchase on the Internet. And so much so, that photographic technologies like Skype™ and FaceTime™ make us feel closer to far away loved ones.

So why do photographs have such power? Much of it can be explained by the realistic capacity of photographs in documenting events but then, what exactly is the nature of this realistic capacity? Panofsky said (of moving pictures) that they presented us with physical reality itself.³ Bazin likewise claimed that photographs weren't representations but rather they "*re-presented*" things out of their time and space.⁴ He also held that photographs were akin to mirrors, except that photographic images are fixed on paper. These may sound like poetic descriptions but there is more literal substance to them than that.

Much scholarship has been dedicated to clarifying these claims. Stanley Cavell for example, explains that "[w]hat Panofsky and Bazin have in mind is...that photography is *of* reality or nature"⁵ presumably meaning that photography is always factual, or rather that is, that they convey truths about the world. And later we will see in some detail how Kendall Walton has likened the photograph to other sight-enhancing devices like eyeglasses, and microscopes.⁶

² Marr 1989, 1990.

³ Panofsky 1974.

⁴ Bazin 1960: 8.

⁵ Cavell 1971: 16.

⁶ Walton 1984.

One can further see that the character of photographic realism is special when bearing in mind how it differs from paintings. Again, the early investigation on these matters can be sourced to Bazin, particularly in his seminal essay, “The Ontology of the Photographic Image.” Bazin laid out several important differences between paintings and photographs, which, aside from being ontological distinctions, are particularly informative on how painting and photographs differ in depicting *realistically*. Some of the differences between them are attributed to how they are made: the mechanical, automatic and objective nature of photographic production on one hand, in contrast with the subjective and handmade production of paintings on the other. The results of this distinction preface later theories that distinguish the realism of photographs and of paintings by their difference in kind –by virtue of their differences in generation.⁷

Bazin claimed the work of realistic representation was taken away from paintings with the onset of photography. He suggests, however, that when paintings were bound to realistic representations, or ‘resemblances’ or ‘illusions,’ they were not free to explore other avenues:

[P]hotography has freed the plastic arts from their obsession with likeness. Painting was forced, as it turned out, to offer us illusion and this illusion was reckoned sufficient unto art. Photography and cinema on the other hand are discoveries that satisfy, once and for all and in its very essence, our obsession with realism.⁸

So, in a way, the advent of photographs can be said to have factored heavily into changing the trends in the handmade arts since photographs did a better job at realistic documentation than paintings did. And consequently, paintings could excel at other things –e.g., the modern art phenomena may have exploded by the spark of this very liberation from realism.

But Bazin’s analysis of photographic realism is a little more radical than photographs just being really great at realistic representation. On the contrary, while he claimed that at best paintings offered *resemblances* to their depicta, or an *illusion* by tricking the eye,

⁷ Bazin 1960.

⁸ Bazin 1960: 7.

photographs were neither illusory nor representational in the traditional sense. Photographs *re-presented* their depicta, or in other words, made these things present again. In *The World Viewed*, Cavell tries to re-express Bazin's claim:

[A]n immediate fact about the medium of the photograph (still or moving) is that it is not painting. What does this mean—not painting? A photograph does not present us with 'likenesses' of things; it presents us, we want to say, with the things themselves. But wanting to say that may well make us ontologically restless.⁹

And in fact, it does: while our intuitions might agree on the difference between paintings and photographs, sourcing their difference to the nature of their realism doesn't, thus far in our story, adequately explain their difference in kind. And there is some initial discomfort with the idea that photographs present us, as Cavell puts it, "with the things themselves."¹⁰ After all, how could we be in the presence of long gone relatives or volcanoes on the other side of the world? Something doesn't fit. And yet, despite the controversial aspect of Bazin's claim, there is something fundamentally appealing about it and as I will argue, accurate. A more convincing (though still controversial) exposition of Bazin's proto-theory, can be found in Kendall Walton's essay, "Transparent Photographs: On the Nature of Photographic Realism," which offers a compelling analysis on the difference between photographs and paintings.¹¹

Walton claims that photographs differ from paintings because they are *transparent*, which is to say that we *see through* photographs like we do mirrors, eyeglasses, telescopes. Transparent devices like mirrors, eyeglasses and telescopes have in common that they enhance our vision without interrupting the natural course of seeing. A device is transparent if it preserves a *belief-independent* and *similarity-preserving* counterfactual link to the object of sight. When we look at objects through mirrors, eyeglasses, telescopes, the object's appearance is preserved without representing the beliefs of others. Photographs too. One certainly sees objects in paintings as well, some with the most masterful capturing of likeness, but paintings are nonetheless counterfactually linked to the beliefs of the

⁹ Cavell 1971: 17.

¹⁰ Ibid.

¹¹ Walton 1984.

painter. This interrupts the natural link between the viewer and the objects seen in paintings, and thus, paintings are generally not transparent. As Walton illustrates, we do not literally see Henry VIII by looking at his painted portrait.¹² Perhaps this is because, as Bazin aptly put it:

No matter how skilful the painter, his work was always in fee to inescapable subjectivity. The fact that a human hand intervened cast a shadow of doubt over the image.¹³

Painters can undoubtedly reproduce what they see with perfect accuracy and steadfast honesty, but when we look at a painting what we see depends on what the painter has seen. Subsequently we depend on their beliefs about what they saw, and what is represented is subject to sceptical hypotheses regarding their beliefs and perceptions. In contrast, as Roger Scruton has put it, a photograph of *x* entails the prior existence of *x*, of which the same cannot be guaranteed by paintings.¹⁴ Photographs are not subject to those sceptical hypotheses regarding beliefs and perceptions, as what they depict does not depend on someone else's experience. It is in this way that the transparency thesis explains the difference in the realist capacities of these respective mediums.¹⁵

Walton's view is the foundation for my thesis, and as such, it will receive substantial attention in Chapter 1, where I will describe the criteria of transparency in more detail. But it should come as no surprise that the claim of photographic transparency is uncomfortable for many philosophers, most significantly because in accepting the grounds for the distinction between paintings and photographs, one must accept that in literally seeing *through* photographs, one *literally* sees into the past. I don't find this the least bit troubling, and I will handle the critics of the transparency thesis in the next chapter. These critics include Berys Gaut, Greg Currie, Jonathan Cohen and Aaron Meskin, who all argue, though for different reasons, that the transparency thesis is too liberal and has in one way or another neglected other necessary features of seeing. Their varying criticisms

¹² Walton 1984: 253-54.

¹³ Bazin 1960: 7.

¹⁴ Scruton 1981: 579.

¹⁵ Walton 1984: 261.

of transparency and my steadfastness in defending it, will also resurface frequently in later chapters.¹⁶

§2 What is a photograph?

I believe it will help at this point to provide a preliminary definition of what a photograph is as I have mentioned, this is will show itself to be of some importance later on. The Oxford English Dictionary (Online) defines the photograph as:

1. A picture or image obtained by photography; (originally) a picture made using a camera in which an image is focused on to sensitive material and then made visible and permanent by chemical treatment; (later also) a picture made by focusing an image and then storing it digitally.¹⁷

We can treat this entry in a variety of ways, but I find it fairly accurate. There are, however, ways to reproduce a photographic process without cameras, such as for example, with photograms or rayograms. Photograms and rayograms are made by putting objects on photosensitive paper and exposing it to light to create shadows and profiles of those objects. A technique using photo-emulsion fluid is also used in printmaking, to develop a kind of photographic image onto a silkscreen, which is then used to print onto other materials. Berys Gaut has also offered an example of the possibility of naturally occurring photographs where photographic salt pools in a cave with a crystal dome to function as the lens.¹⁸ Despite these examples, it has never been clear to me if photograms or rayograms were considered photographs, even though they use *some* photographic techniques. I can say that the output of the screen-printing technique was never in my time as an art student referred to as a photograph. And if Gaut's crystal cavern of pictures is like a primitive camera, then so is the image from it a photographic one. But there is something to be said about the standardization of cameras. Consider for example, whether we would call a curved ice sheet on a lake that magnifies the matter below the same as a microscope.

¹⁶ Currie 1991, 1995; Gaut 2008, 2010; Cohen and Meskin 2004, 2008.

¹⁷ "photograph" [def. 1] OED Online 2013.

¹⁸ Gaut 2010: 28.

Using some of the same materials or a similar process is not enough. Suppose I bake a chocolate cake with x-set of ingredients and employ m-method, for the best results. X-set definitely involves chocolate and m-method definitely involves wildly beating butter and eggs. When I offer this recipe to a friend and they take these two crucial aspects and make a chocolate merengue, we don't then conclude that merengues are cakes and can represent cakes enough to be a counterexample to what my cake is defined to be.

So, I want us to resist taking this similarity in materials or process, as enough to make these all the same things. Using photosensitive materials is not sufficient grounds for making a photogram equivalent to a photograph especially when we consider other images of this kind, –e.g. shadows left from nuclear blasts and tan-lines are pretty close but certainly not photographs. I will grant that photograms and other pictures that use photosensitive materials are cousins of photographs, but strictly speaking, a photograph is the product of a camera (at least, per the current state of technology that produces photographs).

I am also not limiting my discussion to a particular *genre* of photography. While the epistemological virtues of photographs might be more readily available in documentary photographs than in art photography, say, I am devoted to the claim that photographs are transparent. Certainly not all photographs are equally informative, as that virtue depends in part on what one can read from a photograph; sometimes a photograph is badly taken, underexposed, and its content undetectable. Failing to document a timeslice is always possible, but consistently good quality of information isn't always found across all instruments for observation. One has to refocus telescopes and microscopes to get the image right, and sometimes it is still unclear. Ordinary perception itself can have its good and bad days, so to speak. So, I am not willing to limit the discussion to only photographs that provide information in the most accurate representation of a timeslice. This would lead to the trivial claim like the following: only informative photographs are informative.

Let me offer an example posed to me by Barbara Sattler and Dawn Wilson about the following photograph by Simon Prosser:



figure 0.2: St Andrews from the north at sunset, by Simon Prosser.

What is special about this photograph is that Prosser left the shutter open for 30 seconds thus creating an artistic effect of blurred lights and water waves that look like fog. One might want to say that this is not transparent because the technique Prosser used produced an inaccurate picture of that moment in time. But I would disagree. This photograph is basically the equivalent of a 30 second film collapsed into a single picture. While this is not what seeing the St Andrews coastline looked like first hand, I have no reservations about saying this is within the range of things I consider a photograph, and that we see through it. If I stipulate a photograph to represent reality (by being transparent) at time t_1 , there is no quantification of t_1 as one second or ten. One could call this particular photograph, an especially thick timeslice.

There are going to have to be allowances for photographs to vary from first hand seeing to some extent, and this is because there are always differences between seeing first hand and seeing through instruments. Transparent instruments after all, are meant to enhance or extend the repertoire of vision, and to do so they must essentially offer something new to the eye. That is the point of them. So perhaps in the Prosser photograph one can see in an extra special way because the image encompasses a 30 second window, but that is to be expected in seeing through.

Furthermore, this definition of photographs applies to both the film and digital varieties of photographs. Berys Gaut has offered a description of photographs from both kinds of cameras that is helpful to mention here. In his book *Cinematic Art*, he describes the similarity of the way mechanical and digital images are produced explaining that the only difference between film and digital cameras is that the image of the former is imprinted by a photochemical process that has been replaced with an electronic sensor in digital cameras. The rest of the apparatus is nearly the same. As both kinds of images are generated in the same way, both are photographic images.¹⁹ As I am endorsing the camera-borne picture definition of photographs, pictures borne from digital cameras are obviously also photographs in my view.

This definition of a photograph will of course need further qualification. I will offer more substantial elements as the thesis progresses. Part of the definition lends itself to a variety of special and unique elements of photographs, as their being borne from cameras is part of why they are transparent pictures, and part of what specifies their information scope. Thus, we will need to attend to the controversial transparency thesis in detail. In particular, the notion of belief dependence has been shown to be problematic because it seems to conflate a wide range of intentional states and perhaps excludes the possibility that perceptions generate proto-beliefs. I will offer an alternative expression of this condition that will prove to be useful in the subsequent chapters: this is the hallucination test, echoing the illustrations we have discussed so far. In Chapter 1, I will show how the hallucination test highlights the crucial difference between photographs and paintings, and that it is an equivalent operation for the belief independence condition, while also an efficient way to sidestep the issues attached to defining beliefs or intentions.

In the following sections (§§3-6) I give primers for the subsequent chapters of this thesis: respectively, I discuss the epistemology of photography discussed in Chapter 2, the technological provenance of photographs discussed in Chapter 3, digital photographs in Chapter 4; and the appropriate sceptical hypotheses for photographs versus handmade pictures in Chapter 5.

¹⁹ Gaut 2010: 48.

§3 Evidence and epistemic value

I treat Walton's view that photographs are transparent as the foundation for an epistemology of photography, and thereby I will show that theories that attempt to operate without transparency in its foundation are unstable. Although Walton remains neutral on any claim about the epistemic value of photographs,²⁰ his transparency thesis offers, in my view, the best explanation for a distinction between photographs and paintings and that distinction has epistemic import. I will use transparency to help explain the epistemic difference between photographs and paintings, for as we have begun to see in the previous section, this strategy can be quite fruitful not only in distinguishing the kinds of pictures but also in highlighting the special province of photography. (In the following chapters, I will highlight the differences between them with more detail.) This in turn will help to illuminate what warrants our trust in photographs and offer insight on the nature of photographic information.

In general, we have some intuitions about the epistemic differences between photographs and handmade pictures; most simply put, despite some scepticism that comes with the potential for forgery, photographs can give a kind of information that paintings cannot. Both kinds of pictures show us things but in very different ways, and by different criteria of credibility. Incidentally, I will never deny that paintings and drawings can provide evidence too, but of a different sort. For example, a drawing of a crime scene will not convince us that the event it depicts actually occurred, but it can be quite useful as a diagram of that scene and object relations within it. On the other hand, a genuine photograph of that scene can be looked at again and again to gather clues after the fact.

The distinguishing features offered by the transparency thesis help to explain why we trust photographs for evidentiary purposes of a certain kind in a way we would not trust paintings. The evidence provided by photographs is such that a photograph connects us with the objects we see in the same way we are connected to things seen through eyeglasses and microscopes and so forth.

²⁰ Walton 1984: 93, 95; and most explicitly, in the postscript of the 2008 edition of "Transparent Photographs": 113.

However, as noted above, many dispute the transparency of photographs. For example, Greg Currie, Jonathan Cohen and Aaron Meskin claim that photographs fail to carry information about our egocentric relation to the objects photographed, otherwise known as e-information. When one looks at a photograph of an apple, we have no idea where that apple is in relation to us, while when we look through devices like telescopes and microscopes, we know where the things we are looking at are in relation to ourselves. However, Cohen and Meskin argue that this does not diminish the epistemic value of photography but just helps establish it, and this is because seeing also involves the transfer of information about the visually accessible properties of an object (v-information) and this kind of information is typically only available when e-information is also available. On their view, the epistemic value of photographs is then, in part, that photographs are spatially agnostic sources of v-information.

On this view, paintings do not reliably provide v-information and that is why we do not trust them for factual evidence. This mistrust also partially rests on our attitudes about the picture types, that is, people in general trust photograph-type pictures to furnish this kind of evidence but not paintings. So, on Cohen and Meskin's view, photographs are not trusted sources of evidence in virtue of being transparent but rather, because they reliably offer information about the visually accessible properties of objects.²¹ Despite being a plausible alternative, there is a question as to why e-information is a requirement for prostheses or enhancements for seeing, and I will challenge this in Chapter 2. There, I offer what I call the *defect hypothesis* as an explanation for why photographs lack certain information. Because they lack e-information, which is usually involved in ordinary vision, photographs can only provide a defective sort of vision, but they are nonetheless transparent because most instruments of observation lack something from the natural range of vision. The defect hypothesis is a precursor to unpacking the technological dimension of photographs, which itself is a defining feature of photographic information.

§4 Photographs, technology and instruments of science

One significant reason I find the lack of e-information is not to the detriment of photographic transparency is that it has been intentionally excluded in the engineering of

²¹ Cohen and Meskin 2004, 2008.

cameras. When a device is engineered, there is a process of discrimination that decides what privileged set of information is to be prioritized, and the other information is done away with. This applies to most transparent instruments (though not of their naturally occurring counterparts), and would thus apply to photographic pictures in virtue of their coming from cameras. Engineering protocol partially defines the epistemic value of photographs for there it is decided what information photographs will furnish and what is to be expended to highlight the photograph's virtues. And in contrast, handmade pictures are not subject to this limitation. This is not only a strong reply to why photographs don't bear e-information – as not only are their limits set by the cameras that produce them, but more significantly, the photograph's virtues depend on those limits– but it adds another dimension to the province of photographic information. This tells us what the scope is and why.

Patrick Maynard can be credited with making a substantial contribution to analysing the technological dimension of photographs in his book, *The Engine of Visualization*.²² He placed special emphasis on the epistemic salience of a photograph in its being able to provide information by facilitating both depiction and detection, in a relation where depiction can be to the benefit of detection. This is special because most handmade pictures tend to offer the former to the detriment of the latter, and most scientific instruments tend to the opposite exclusion. Though I will not be attending to Maynard in particular in Chapter 3, I do owe that analysis to his findings, and while not directly connected, I believe the distinctions I offer at the end are complimentary to his.

For technological instruments and devices, there are conventions in place that govern the appropriate design and production practices. In N.P. Suh's *Axiomatic Design*, he describes technological design as motivated by an idealized product, that is, devices that will function with efficiency and grace. He describes the design process as a three-stage protocol. In the first stage, a potential device is considered with respect to its functional requirements. That is analysed according to the needs of a customer (hypothetical or actual) in order to determine what the thing must do to meet those needs. This defines the task of making that device, creates the parameters of its functions, and creates a best-fit scenario. Secondly, these functional requirements are translated into *specifications* for the

²² Maynard 1997.

design of that device in order to define the exact physical components and their interaction. At this stage, decisions are made about what information is essential and what information needs to be done away with in order to make the device function at its best. Some information is at cross-purposes with the best-fit scenario, and that information must be eliminated. This is followed by the third and final stage of blueprinting, which more or less gives the recipe for making the device by offering a list of instructions and schematics for producing and reproducing the device.²³ As a result of such a protocol, we can expect that instruments of observation are designed to offer a specific information set, and that set is exclusive.

Given that technological devices have undergone such a systematized route to production, and cameras are under the wing of engineering, an epistemology of photography should be considerate of that connection. In evaluating what is special about photographic pictures, one has to remember the fact that they are borne from cameras and that the photographic image is directly dependent on that camera. The design stage in the camera's engineering specifies what information is to be furnished and which information is expendable for the device to function optimally. Thereby, the camera offers a privileged set of information, – information further made available by the photographic image it produces– and thus it should not be surprising that the photograph's range of information does not include all information normally available to seeing. E-information is one example of information that would undermine the virtues of photographs: since e-information requires a real-time object-seeing relation, it is at cross-purposes with the photograph's ability to capture a moment in time to be looked at later.

It is true that other kinds of pictures are the products of technology, but not all have such a direct limit placed on them by the technology. There may be an intuition to claim that handmade pictures like paintings are also technological, though that technology might be of an old variety. However, while the materials may be the products of technology or a technology in their own right, a technological device neither directly nor necessarily produces a painted image. The paintings and drawings that are made with the technology of paints and charcoal require additional components to complete the image-making

²³ Suh 2001: 11.

process. They require an agent of some kind to generate the image using the technology of paints, boards, brushes, etc. At best, they are *indirectly* made from these technologies.

How we come to know by a variety of instruments and devices is partially determined by their functions and uses but also, how they come to be made. After all, the development of our instruments is quite often related to what we want to know more about. In Chapter 3, I will examine this dimension of photography by considering them alongside scientific devices like telescopes, microscopes, etc., on the one hand, while drawing contrast to scientific pictures like schematics, maps, and such, on the other.

There I will also describe a view that challenges the objectivity of scientific devices because of the technological protocol they undergo: Bas van Fraassen's book *Scientific Representations* argues that scientific tools are all representational devices.²⁴ After all, if microscopes and telescopes are designed to look at specific things, and those designs are based on theories, which initially depend on beliefs, then how can any of these instruments be belief-independent? At first glance, this will appear to contend with transparency and yet, attending to this kind of analysis is crucial for understanding why we trust some representations (in van Fraassen, a more broadly construed sense of the word) over others. The answer is once again found in the principles of transparency, with the help of my refit called the hallucination test.

§5 Are photographs still reliable with digitals around?

In Chapter 4, we will look more closely at the problem of digital photographs, which presents their own problems for the epistemology of photography. I believe we generally trust photographs. However, considering that we trust photographs on the basis that they are more likely to be genuine articles than not, we might find it troubling that the widespread use of digital photography, and the easy manipulation of their content, threatens these views. Subsequently, that may threaten to undermine the warrant we carry over from photographs before Photoshop™. We then have to ask: On what grounds do we continue to trust photographs when doctored photographs are so commonplace?

²⁴ van Fraassen 2008.

One strategy is to deny that digital photographs are photographs at all. On W.J. Mitchell's view, digitals are only nominally photographs but actually not photographs at all. While they act as photographs do, or rather, perform the same *functional role*, we will over time be able to recognize the vast difference between digital images and traditional photographs. This is much like we now recognize the vast difference between automobiles and horse drawn carriages, which also have the same function and in previous times, the shared terminology.²⁵

However, as mentioned in §2, Gaut suggests the differences between them do not distinguish them in kind. Even though some of the differences between traditional photographs and digital ones allow more opportunities for manipulation in the latter sort, this does not mean that when those opportunities are *not* taken, that digitals are not photographs. Traditional photographs and digital photographs are produced almost the same way and as I mentioned in §2, Gaut shows that this is the more relevant comparison:

The crucial difference between a digital camera and a traditional camera is the replacement of a photochemical film with an electronic sensor [...]; the lenses, optical systems, shutter mechanisms, and so on, can be identical. Given the similarity of generative methods, it is implausible to claim that one is a photograph and the other not.²⁶

While Gaut does not maintain that photographs must come from cameras,²⁷ I maintain the camera-borne picture definition, and so, pictures borne from digital cameras are photographs. But they still pose an epistemic problem for the general category of photographs. As Barbara Savedoff has argued, the ease of manipulation of digital photographs threatens to undermine the trustworthiness of photographs in general.²⁸ However, knowledge of the fact that digital images are often manipulated does little harm to our general trust in them perhaps because even traditional photographs can be manipulated.²⁹

²⁵ Mitchell 1992.

²⁶ Gaut 2010: 48.

²⁷ Gaut offers the example of photograms, in 2010: 28; and in conversation.

²⁸ Savedoff 1997, 2008.

²⁹ Gaut 2010: 67-71.

However, I do think it is important to offer a distinction between digital photographs and digital paintings so as to demarcate which images are transparent and which are opaque. Not all digital images come from cameras, and thus, on my view those images are not photographs. We might then want to say that some digital photographs are actually digital paintings in disguise, so the line between a photograph and painting is now unclear. But some analogue photographs are fakes too, using techniques to falsify the content somehow.

The problem is in pinpointing when the transformation of a picture from photograph to painting has happened. This difficulty is made apparent when trying to come up with a principle for which modifications are acceptable and which not. The problem with offering the strictest principle –i.e., that once a digital photograph has been doctored in any way it becomes a digital painting– is that some manipulation is relatively benign. For example, using a common feature like red-eye reduction does not then render the image into a digital painting, does it? That seems to be too strong, and perhaps misses the problem. There are certainly limits to what is acceptable to modify of a photograph, digital or analogue. The problem that digital photography leaves for us then is where to draw this very line between digital photographs and digital paintings. I will not provide a full theory but I will classify these modifications in Chapter 4 and then offer a suggestion for how to go about making a demarcation.

§6 Sceptical hypotheses and a comparison with testimony

I mentioned earlier that paintings are subject to sceptical hypotheses that photographs are not. In Chapter 5, I will explore that further in order to highlight a fundamental difference between them, that is at least an epistemic distinction. I will offer an analysis of different kinds of belief sources to highlight different kinds of evidence, and from that draw a comparison between testimonial-based beliefs and experience-based beliefs. In this analysis, handmade pictures will be likened with testimony because both share a necessary feature of belief dependence.

However, photographs are not belief-dependent and are thereby not subject to the same sceptical problems as testimonial artefacts. When we look at what kind of scepticism applies to a photograph, we will see that it is the same as that which applies to perception.

The beliefs formed by way of photographs are thereby susceptible to scepticism about perception. Since the kind of sceptical hypothesis that photographs are susceptible to differs from that of handmade pictures, we have good reason to consider photographs a different kind of belief source altogether. The evidentiary role of photographs then is not that it tells us something about the world or represents some fact of the matter, but rather, their epistemic value lies in their provision of perceptual knowledge.

§7 Thesis contributions

A note about strategy: I will constantly compare photographs to handmade pictures on one hand, and to a lesser extent, other transparent instruments on the other hand. As we have begun to see, paintings are vulnerable to representing the beliefs of their makers and photographs are not. Photographs cannot reproduce the contents of hallucinations or misperceptions, distinguishing them from handmade pictures as well as from other kinds of pictures that may not preserve similarity, like schematics.

Meanwhile, some tools, while independent of beliefs, represent the information they provide without preserving similarity relations: for example, thermometers offer a measurement of temperature that fluctuates according to temperature changes, but we don't literally see temperature through thermometers. Thus, they represent temperature in a way that does not preserve similarity. Photographs maintain similarity relations to their objects.

The theory that results from my research is as follows: Photographs are transparent and thereby furnish perceptual information indirectly, like other lens based devices including microscopes and telescopes. As they offer perceptual information, the kind of knowledge they offer is experiential knowledge, unlike other kinds of pictures, which offer depictions equivalent to testimony. And further still, while they share the feature of transparency with other instruments of observation, photographs stand apart from these devices in their being externalized pictures, –that is to say, that the photographic image is detached from the camera. This is part of why photographs are special, and why they are the focus of this thesis.

Note: One might wonder why I have not designated a section to the aesthetic questions I offered earlier. I feel that a chapter on the aesthetics of photography would detract attention from my main project and cause some confusion. But it is an important domain in the philosophy of photography so, as a compromise, I offer some discussion in an Afterword of how my findings might work with aesthetic theories of photography.

I



TRANSPARENT PHOTOGRAPHS

Walton's Thesis, Cons & Pros

Walton is to be credited for the thesis that photographs are *transparent*, which is to say, that we literally see the objects of a photograph *through* photographic pictures.³⁰ A preliminary undertaking of this chapter is to give a detailed account of what this really means. Then, in the latter half we will look at some criticisms and respective theories, namely, those offered by Berys Gaut, Gregory Currie, and Jonathan Cohen and Aaron Meskin. I will audit how they fail and succeed, handling the issues raised for the transparency thesis in this chapter, and in Chapter 2, handle the responses pertaining more specifically to the epistemology of photography.

§1 The Transparency thesis

Transparency applies to a wide range of instruments that we use to see the world. It is helpful to note from the outset that ultimately, the main comparison is not between photographs and ordinary seeing, but rather in the photograph's alignment with a certain class of instruments. The claim is thus, that we see through photographs in the same way we see ourselves through mirrors, see clearer through eyeglasses, see paramecia through microscopes, see the stars through telescopes, and so on.³¹

Now, there are many devices that come between our eyes and the objects we see, and not all of them are transparent. Opaque instruments, in contrast to transparent ones, can be said to interrupt vision rather than enhance it. For example, when we look at a drawing of the Eiffel Tower, we see a representation of the tower by an illustrator. We do not see the tower itself through the drawing the way we would see the Eiffel Tower, say, through the window of a café on the Champs Élysées. The drawing depends on the perception of the

³⁰ Walton 1984: 251.

³¹ Walton 1984: 252.

artist, as it comes to exist through his representation of his visual experiences. Thus, the drawing acts as an interruption in the causal chain between object drawn and our eyes. On the other hand, a thermometer does not represent the perceptions of others but is not transparent either. Thermometers fail to exhibit a similarity with temperature itself. We see a representation of a measurement of temperature, but we do not see temperature itself through a thermometer. The drawing and thermometer examples highlight two fundamental features of object seeing that the transparency thesis is picks out.

Walton describes a kind of causal theory of perception: “to see something is to have visual experiences which are caused, in a certain manner, by what is seen.”³² That “certain manner” is explained to be a counterfactual dependence on the object of sight that is both 1) **belief-independent** and 2) **similarity preserving**. These are the characteristics missing from the drawing of the Champs Élysées and the thermometer, respectively. This description is not a provision for a theory of seeing, but it is intended to highlight the conditions of ordinary seeing that are important markers for transparent devices. Walton is particularly reluctant to claim these conditions are *sufficient* for seeing as well, while he is more favourable to their being necessary features.³³ In any case, one should expect transparent instruments to obtain both of these conditions, if not perhaps more.

Now, to better understand these conditions. Concerning 1) belief-independence: When we see, a counterfactual link is, as it were, formed between the content of our visual experience and the objects in the world that act as the cause for that content. We see the trees on the horizon because, under normal conditions, there are trees on the horizon to see. Had there not been any trees, the visual experience would’ve represented a treeless horizon. Of course, there are some abnormal situations where this link isn’t preserved, as is the case with hallucinations. However, we can expect that on ordinary occasions normal conditions will be in place for seeing. Furthermore, under normal conditions, seeing those trees is a belief-independent affair, which is to say that no one else’s beliefs have caused those trees to appear in our visual experiences.³⁴

³² Walton 1984: 261.

³³ Walton 1986: 128 fn. 36.

³⁴ Walton 1984: 263-265.

We can better understand the significance of belief independence by looking at one of Walton's thought experiments: Helen is blind but has visual experiences through direct stimulation of her brain, which is managed by a neurosurgeon. However, the surgeon stimulates the neurons according to his own visual experiences, which means that her visual experiences correspond to what the surgeon sees, or rather, what he *believes* he sees. As such, her visual experiences are vulnerable to his mistaken beliefs: if the surgeon misperceives or hallucinates something, the content of the hallucination would be in Helen's experience.³⁵

We can imagine that if the surgeon has taken psychedelic drugs and sees a gnome climbing onto his shoulder, Helen's visual experiences will correspond.



Figure 1.1: Blind Helen, Ines. de Asis, Feb 2015.

³⁵ Walton 1984: 265.

In such instances, Helen may have a visual experience that represents those hallucinations, but she cannot be said to see gnomes on her shoulder any more than the surgeon does (and he does not). This system of seeing is unreliable. However, if Helen's visual experiences were caused by a process that did not depend on the beliefs of others, –such as, an unmanned elaborate machine or a prosthetic eye– then she could genuinely be seeing.

The belief independence criterion has caused a great deal of confusion because belief itself is not the clearest concept, and 'belief' here can actually apply to a variety of intentional states. Further still, depending on one's theoretical commitments, not all perceptual events require an intentional state. I believe Walton's expression of "belief independence" is a truncation of a longer description, perhaps like, 'independent of a range of intentional states, characterised by beliefs about what one has seen but not limited to proper beliefs' and so on. This includes those that some might call proto-beliefs.³⁶ I also believe that trying to impose or use a concocted definition of belief yields unnecessarily complicated results so instead, I suggest we find an equivalent expression of the criterion.

Bearing in mind the hallucination illustration that Walton offers to differentiate transparent and opaque pictures, one can take note of the following: Opaque devices can represent the surgeon's hallucinations, even if they do not normally do so; and transparent ones cannot, even if one wants them to. Thus, I suggest that what one should really ask of a device is whether the hallucinations of others can be represented by it.

Call this the **hallucination test**:

For any candidate instrument of observation, if the device's process is **vulnerable to representing hallucinations** (of others), then it counterfactually depends on *at least* proto-beliefs, if not explicitly representing any number from a range of intentional states.

Belief dependence then amounts to being able to represent the content of hallucinations. Conversely, one can ascertain whether a candidate device is invulnerable to representing

³⁶ Walton 1984: 264.

hallucinatory experiences of others. A device that cannot represent the hallucinations of others is thus **belief independent**.

In *Image and Mind*, Gregory Currie offers the following case as a counterexample to Walton's thesis: suppose that Blind Helen's surgeon was not any ordinary surgeon but godlike. Similarly, imagine a world like that of Malebranche where God mediates everything we perceive: Since one sees nonetheless in Malebranchia, doesn't this undermine the belief-independence criterion for perception? Currie suggests that belief-independence is not necessary for seeing after all.³⁷ However, this example is problematic. Because gods don't have beliefs (they simply know everything), seeing through a god's eyes would not count as belief-dependent seeing. Furthermore, a god would not be subject to failing the hallucination test that is tantamount to the belief-independence condition.

We have strong intuitions about the role of external intentional states interfering with our senses. This is why thought experiments like Blind Helen and Malebranche's cosmology are so troubling: some major deceptive factor has interfered with the natural order of observation, and in the end, with our contact with the truth. The lesson we can gather from the Blind Helen experiment, and those like it, is that what other people believe they have seen should not factor into what we perceive. Furthermore, this standard of belief independence, or hallucination invulnerability, is to be held to devices that are intermediary. And that is precisely Walton's point: that devices that mediate vision should preserve some belief independent counterfactual dependence on the objects seen if it is to be considered an enhancement to seeing. Otherwise, we do not see through it.

To illustrate, when we see using bifocals or telescopes, we do not face a problem like Blind Helen's. Furthermore, we don't deny that we see through eyeglasses, nor does it represent the world to us through someone else's eyes. The content available via these instruments is not vulnerable to representing the hallucinations of others. (If we are hallucinating ourselves, this is another matter that first hand seeing is also vulnerable to.) In virtue of being invulnerable to hallucinatory content, eyeglasses, telescopes and a number of other devices, preserve that belief-independent counterfactual link. Thus, these instruments meet part of the standard under which they can be said to enhance the repertoire of vision.

³⁷ Currie 1995: 62-63.

Photographs also preserve this belief-independent counterfactual link to their depicta. That is to say, they are not vulnerable to representing hallucinations. In contrast, paintings do have this vulnerability. Even paintings that are realistically depicted by the most reliable painters are nonetheless vulnerable to representing hallucinations as their mode of depiction is causally linked to the beliefs of the painter. Imagine a person who is compromised by psychedelic drugs, and this causes him to hallucinate a gnome sitting in a tree. If that person were to attempt to document his visual experience by painting it, the content of the hallucination could translate into his painting. He believes he sees a gnome, he represents what he sees in painting his picture, and his painting thus depicts a gnome in the tree. The painting can thus represent the content of his hallucination.

However, if instead he attempted to document that experience with photographs, his efforts would not be successful: what he sees, or rather, what he believes he sees, will have no bearing on the photograph. Photographs do not bear this necessary correlation to photographers' beliefs because their mode of generation is causally linked to depicta in a different way. Photographs are causally linked to what lies before the camera. Quite often, the photographic content can easily fail to represent the beliefs of the photographer. And, more often than is the case with paintings and painters, photographs can be produced without a photographer, –e.g., speed cameras on the motorway. Thus, causal links to their respective depicta differ significantly for photographs and paintings, and this has to do with the way the images counterfactually depend on their depicta.

As we have seen above, the beliefs of painters inform paintings but moreover, paintings counterfactually depend on those beliefs. For paintings then, the objects depicted would have differed depending on whether they were seen differently by the painter, sourcing the counterfactual dependence to the content of the painter's perception. But photographic pictures are not so linked with someone's perceptual content and are actually rather poor at representing it. Instead, the content of a photograph depends on what was there for the camera to photograph. For photographs, had the object been different when the photograph was taken, the image presented by the photograph would have also differed. Photographs can, in effect, bypass the counterfactual dependence on beliefs.

Indeed, there are exceptions in either case: It is not normally the case that paintings represent hallucinations, nor even that all paintings depend on painters' beliefs. Normally, hallucinations are not a factor in painting but they are nonetheless vulnerable to representing them. Also, one can imagine paintings generated by computer, or by machine and one can buy a variety of painting-like decorations at Ikea and so on. These types of painted pictures are not made by artists, so here belief dependence does not factor in. However, such cases are not counterexamples either. Insofar as a painting is of the type that represents something in the world by having some connection to its depicta, that connection is vulnerable to representing the content of hallucinations. Meanwhile, under normal conditions photographs succeed in corresponding to what we see. There may even be cases where one takes a photograph while in a state of hallucination and there is a correspondence, just by sheer accident. But then the link between depicta and image is dubious. Nonetheless, photographs are immune to representing hallucinatory content because photographic images do not, and cannot counterfactually depend on hallucinatory experiences.

The belief independence of photographs does not mean that a photograph cannot be expressive of thoughts, convey aesthetic intentions, or meet the aesthetic goals of photographers. On the contrary, this is what is remarkable about photographs that succeed in doing so. Capturing those features is difficult, usually taking time to master. One cannot expect a photograph to do what one wants in the same way as one can manipulate paintings to one's vision. But as in all good art, some mastery over how to manipulate and stretch the parameters of a medium is part of the process, and the most impressive artistic photographs are those that can challenge what we know of those limits. Photographs can also include information that is in some way dependent on the photographer, such as which objects were chosen for the picture, level of light saturation, angles of objects, perspective, etc. But a photograph cannot convey that information if it is not already there to be photographed, within the range of the camera's capabilities, or within the range of techniques for printing a photograph. Some of those techniques can even be used to convey fictions, but that is not the same as being invulnerable to hallucinatory content. Yet, more often than not, despite the correlation being an accidental one, the photographer's eyes and the camera both see the same thing. The resulting photograph comes out as expected because, after all, the camera has been designed to reproduce the sights we see.

Condition 2) is preservation of similarity. I mentioned thermometers early in this chapter to illustrate a kind of device that preserves a belief independent counterfactual link but that we nonetheless fail to see through. What is missing in the thermometer is a reasonable likeness to temperature. It isn't the thermometer's fault that we do not see temperature through it, as we could not see temperature in a way that is meaningful for our purposes. Thermometers are informative by other means; particularly by acting as a visual measurement of the temperature they represent, and to which the measurement function is counterfactually linked. It is important though, for enhancements of vision to maintain a visual likeness that thermometers do not, hence the second condition of transparency.

Walton illustrates the importance of similarity preservation by distinguishing between depictions on the one hand, and descriptions on the other. After all, descriptions can also have a belief independent counterfactually dependent link to what they describe. Take Walton's example of a computer-generated description that can accurately and perfectly describe all the features of, say, a scene of trees on the horizon. Intuitively, despite being belief independent, such descriptions would fail to constitute instances of seeing because, while they offer quite a lot to the imagination, the *visual information* they provide of those trees is not given in a visual mode.³⁸ A program that could take the image of a gnome and describe it to Helen perfectly may give her visual information about the gnome, but only in the way novels do when describing landscapes. The description does not give Helen visual information *only had visually* about the gnome's visible properties; it does not present her with the gnome's likeness; and ultimately, Helen does not see the gnome by its description.

Getting information visually about objects can take many forms, including paintings and photographs, as well as first-hand seeing. However, these have in common that one must see the information about an object to obtain a specific kind of information only available to seeing objects. Similarity then, should be understood as not only content specific, –because content can vary in kind, can be pictorial or descriptive– but as a resemblance that is based on a common kind of information. In this particular case, the similarity is found in a privileged set of sight-specific resemblances to the object.

³⁸ Walton 1984: 270.

One can further distinguish depictions from descriptions by an appeal to the notion of perspective, which is a feature of the former but not the latter. Resemblances between pictures and what they depict are distinguished from descriptions of those objects by the way pictures offer a resemblance that bears perspectival features. A picture of cake will show it to have a round shape made oblong in two dimensions, fluffy frosting texture that becomes less detailed in the background, and from one particular angle rather than another. Perspective yields the feature of occlusion, that is, only one perspective of an object is made available at a time, often occluding the aspects of the object that might be available to other perspectives.³⁹ A description of cake cannot offer visual perspective.

Walton describes these strictly visual similarity conditions by comparing the kinds of mistakes one can make between depicta. The type of mistakes one makes with photographs and other pictures are akin to those mistakes made in seeing. That is because the information is given by a similar set of resemblance properties, and similarity between the way things look can lead to confusing the two. But that confusion between resembling parties involves different sets of resemblance properties for, respectively, depictive and descriptive similarities. In read or heard descriptions we easily confuse words like *horse* with *hearse*, either because they sound similar or appear similar as words. There are visual resemblances in how the words appear, and there are auditory resemblances in how the words sound. Yet, what these words describe, do not resemble each other. When we see horses and hearses, there is never cause for confusion between them because they do not look very much alike. Nor would we ever confuse a picture of a horse with a picture of a hearse.⁴⁰ In pictures, as well as in ordinary seeing, horses might be confused with ponies, donkeys and mules, rather than hearses. Hearses could be confused with station wagons, el Caminos and so on.

Now, it is true that one gets the information in a visual way by reading text, as reading is an activity that requires seeing words, but the properties of the things described can be offered in a variety of modes. There is clearly a kind of visual resemblance between the

³⁹ *Occlusion* from Hyman 2000 and 1992; also, *perspective* from Hyman 1992; Lopes 1996: 118; Van Fraassen 2008: 36-39.

⁴⁰ Walton 1984: 270-272.

text *horses* and *bearses*, especially when they are in the same font. However, this comes from another set of resemblance relations that are not perspectival.⁴¹

§1.3 What transparency does not claim

It is now important to mention that photographic transparency does not amount to synonymy with any of the following claims, which I take one by one:

- 1) agent-free
- 2) aesthetic deficit
- 3) paragon accuracy
- 4) authenticity
- 5) epistemic superiority to handmade pictures

1) Belief independence in photographs is not equivalent to being free of an agent. People take photographs, and many people use cameras on a daily basis. There is no denial of the fact that photographers decide how to frame the photograph, when to take the picture, how to adjust certain aspects of the image, how to crop it, and a number of other things. When photographers are involved in the making of photographs, they make decisions that inform the final product, even if the limitations of this differ significantly from the limitations in making paintings, and this is compatible with the transparency thesis.⁴² Agency can take on different routes and one should be considerate of the distinction between at least two kinds of agency. A painter's agency in the creation of art is necessary to the painting's existence. Without her experiences, and her active use of techniques to transpose the experiences into a picture, the painting cannot represent something in the world. The painter's agency in the method of production is relative to her beliefs. On the other hand, there is a kind of agency that does not depend on the beliefs of that agent, even though his presence may be integral to whatever the project is. Scott Walden's paper "Objectivity in Philosophy" makes this distinction specific to philosophy of photography.

⁴¹ There may be reason to consider text/font art to be an exception to this but I leave this aside for another project.

⁴² Walton 1984: 261-262.

He explains that mental states involved in photographs are belief neutral or *objective*, as opposed to belief dependent.⁴³ While the production of a photograph is a belief neutral causal affair, agents are nonetheless involved in making photographs. Yet, while a photographer is an agent of picture making, his experiences are not imperative to producing a photograph of something in the world. His perspective and compositional choices will inevitably inform the outcome of the photograph but it remains relatively neutral to his beliefs, in that, it cannot represent his hallucinations.

2) Transparency is also far from synonymous with any claim about the aesthetic deficit of photographs. Photographic transparency does not preclude photographs from being genuine candidates for artworks, and should not be confused with a challenge put forth by Roger Scruton in his article “Photography and Representation.” The aesthetics of photography can source one of its major problems to Scruton’s article in which he argues that photographs do not meet the criteria required for being a representational art. This is partially because, as he argues, photographs can only *present* objects to be looked at, in virtue of having a *merely causal* relation to those objects. Thereby, they are not representational for being representational involves an intentional relation to the objects depicted. Consequently, attributing aesthetic properties to photographs actually amounts to evaluating the objects they present and not any feature of the photograph itself. Photographs *qua* photographs cannot in their own right be aesthetic objects.⁴⁴

The Scruton-like scepticism about the aesthetic possibility of photographs, that is, that photographs lack the ability to express thoughts in virtue of their belief independent production, does not necessarily apply. There are many ways for photographers to be involved in the outcome of their photographs that can result in expressive photographs, some of which I listed above regarding agency. These ways of being involved with the final outcome suffice to give photographers ample opportunities to make creative and artistic decisions so, there is no lack of choices for a photographer to execute in order to create an artwork through photography, nor lack of control of the device as an aesthetic medium.⁴⁵ In short, there are many things a photographer can do to make art by photographs and

⁴³ Walden 2005.

⁴⁴ Scruton 1981: §8.

⁴⁵ More on aesthetics and transparency in Lopes 2003.

this is compatible with transparency. (Note: a more extensive discussion of the aesthetics of photography is in the Afterword of this thesis.)

3) It seems possible to misconstrue the criterion of similarity preservation as in equivalent to accuracy. However, there is also no claim being made about the accuracy of a photograph when providing information about objects. Of course they *could be* especially accurate, but there really needn't be such an expectation for photographs because ordinary seeing is often inaccurate, and so are other transparent devices. In any case, whether such a standard can be met by photographs or not, and how they might achieve such paragon accuracy, is not to be confused with the claims of transparency.⁴⁶ Photographs need only be as relatively accurate as ordinary seeing, however that may be.

4) The authenticity of a photograph is naturally a cause for doubt in a world where counterfeits exist. Yet, it can be said that if a photographic picture is not authentic, then it is not expected to meet the conditions of transparency. This is not only because its generation might be ambiguous (making it difficult to determine whether it is transparent, what its epistemic value is and so on) but mostly this is because it isn't even a photograph. We expect that genuine photographs are normally generated under certain conditions that help to secure the objective value they preserve, and that is how they can be held to the conditions of transparency.

Now, on the other hand, the problem of telling apart the genuine photographs from their fake counterparts is another matter. Knowledge of that fact about a great many things is often unavailable to us, but it should be said that we cannot expect assurances of this kind in ordinary seeing either. Consider, for example, the thought experiment about False Barns: When we see barns in the distance, we have good reason to believe there are barns before us but as it turns out, we cannot be sure whether we are seeing genuine barns or barns façades.⁴⁷ Deceptions like these can occur in ordinary seeing and also through transparent devices, so there is no expectation that photographs be immune to them.

⁴⁶ Walton 1984: 258, 266; and 2008: 92-95.

⁴⁷ Credited to Carl Ginet in Alvin Goldman 1976.

There is another important distinction to make about the epistemic value of photographs, which is after all the focus of my thesis. One will not find a necessary transition from the transparency thesis to a claim about 5) the epistemic superiority of photographs over hand-made pictures. Walton's view on the matter is somewhat agnostic: while the transparency claim is synonymous with saying photographs are like seeing through a prosthesis, and seeing is a source of knowledge, he does not make any claims about the value of photographic information in relation to other kinds of pictures. He holds, –and I agree with this, – that other pictures can furnish information that perhaps photographs cannot.⁴⁸ One can hand-draw a picture of a suspect based on a description provided by the victim resulting in a depiction that resembles them or provide a diagram for how to assemble a piece of furniture. These sorts of functions are difficult to achieve with photographs.

However, I do wish to provide a further exploration and evaluation of this difference in epistemic value between photographs and paintings. While a defence of the claim that photographs are genuine prostheses for seeing does, in my view, help establish what kind of information they provide, I do not mean to say their epistemic value is superior to paintings by virtue of that. Like Walton, I will make no claim about epistemic superiority in photographic pictures. However, unlike Walton, I do wish to offer something of the special province of photographic information. I think handmade pictures are invaluable in ways that photographs are not, and vice versa, and that if we attend to their respective specialties, this will illuminate on what differentiates them in kind. In Chapter 5, I will provide a distinction between information carried by photographs in contrast to that had by hand-made pictures and will ultimately provide for an analysis of the difference in epistemic values between them because of differences in their appropriate sceptical hypotheses.

§2 Resistance to transparency

This section will begin to reply to some of the major criticisms of transparency. A substantial portion of issues against transparency have developed from the counterexamples initially suggested by Gregory Currie. Generally speaking, Currie argues

⁴⁸ Walton 1984: 259; and 2008: 113.

that transparency is too broad, citing a number of conditions that are normally available to seeing, which are absent in the transparency account, –in particular, our being present to the objects we see so that we can understand our relationship to them in space is an important feature of seeing neglected by the transparency account.⁴⁹ I will examine this claim in §2.1. Aside from the egospatial condition, Gregory Currie and Berys Gaut both provide other problem cases for transparency. These cases involve moulds and replicas of objects that maintain the belief independent and similarity preserving counterfactual link but nonetheless, do not put us in perceptual contact with the original object. Instead, we have a sort of type identical perceptual experience with the object of sight. We will look at this more closely in §2.2. Gaut also offers an optical theory as an alternative to transparency: he argues that an account of seeing should attend to the essential involvement of light rays, and for transparent devices, the same light rays will make the journey between objects and eyes. But this link is not preserved in photographs and so photographs are opaque. In §2.3, we will look at this proposal alongside a parallel account of sound waves. Finally, Jonathan Cohen and Aaron Meskin offer a revised version of Currie’s proviso that we should be able to track where we stand in relation to the objects we see. They instead argue that tracking is not required per se, but that egocentric spatial information should be available in devices for seeing.⁵⁰ We will look at whether this amendment salvages the condition in §2.4. (Since this condition ultimately informs Cohen and Meskin’s theory on the epistemology of photography, I will pay special attention to their view in the next chapter.)

§2.1 Currie’s criticisms and the function of seeing

Gregory Currie offers multiple critical points in Chapter 2 of his book *Image and Mind*. We have already addressed one, namely, the Malebranche counterexample in §1 of this chapter. In this section we will begin to address his account of the function of seeing, to be continued in the next chapter.

When we look at photographs, a fact is clear: we often do not know where the objects photographed are now, and often would not be able to trace their location in relation to

⁴⁹ Currie 1995: Ch. 2.

⁵⁰ Currie 1991: Ch. 2; Gaut 2019: 91-92; Cohen and Meskin 2004.

where we are. So why must one be present to the objects we see? Well, for one, not being present to the objects of photographs means we cannot trace where they are in time or in space, and this is something one can do with other transparent devices. We can tell where the paramecium is when we look through a microscope, where the constellation is when we look through a telescope and so forth. The photographic image doesn't offer such direction and may picture someone who no longer exists or is impossible to locate. In fact, Walton did mention something about photographs putting one in contact with long-gone relatives, didn't he?⁵¹

Currie argues that our presentness to the object is a necessary requirement because this contributes to another condition of visual perception, particularly being able to track the objects we see in relation to where we are. In ordinary seeing, what we see is often traceable in relation to ourselves. If we see a carnation, we can draw an imaginary line between our eyes and the flower. How we move around that flower will change that line and change its place in our field of vision. For example, if one first looks at the carnation in front of one and then turns one's head 90 degrees to the right, the carnation will appear in the leftmost perimeter of one's field of vision. This egocentric spatial tracking is not possible with photographs.⁵² I want to highlight that Currie's analysis is to be understood as a *doxastic* requirement –that is, that one can make a *judgment* about the location of that object relative to oneself.⁵³ We will be looking at a *nondoxastic* version in §2.4.

Additionally, Currie insists that seeing not only allows us to track an object egocentrically but this tracking principle is an operation of the *function* of seeing as the fact that “seeing provides us with egocentric information [which] is connected to the fact that seeing is perspectival.”⁵⁴ Now, this particular account of function is to be understood in terms of the biological theory that the proper function of a thing is what it is supposed to do, and when it cannot do this, is malfunctioning. Furthermore, on this account of function one can determine if a trait is necessary to the function of something according to whether it would continue to exist without the trait. One can immediately see why Currie thinks tracking e-

⁵¹ Walton 1984: 252.

⁵² Currie 1991: §4.

⁵³ From Cohen and Meskin 2004.

⁵⁴ Currie 1995: 53.

information to objects is crucial –our being able to judge the location of objects egocentrically has its biological benefits. Knowing where things are and how to navigate with respect to our field of vision helps us avoid oncoming traffic, falling objects and tripping over cables.⁵⁵

Currie thus stipulates that e-information tracking is the function of seeing, and that its absence must mean a malfunction of seeing. It is thereby, on his view, a necessary condition for seeing. And as a necessary condition for seeing first hand, one must then require it of seeing second-hand. Since it is not possible to track one's egocentric spatial relation to objects in photographs, we do not see *through* them. Mirrors, eyeglasses and telescopes allow us to see objects because the objects are present to us when we see them, but photographs do not allow us to track the objects photographed.⁵⁶ Photographs are just another sort of representation of those objects and as representations, Currie contends, photographs cannot be considered transparent.⁵⁷

However, it is clear that photographs are different from paintings and other handmade pictures, and Currie explains their difference to be that photographs are *natural representations*, whereas hand-made pictures are *intentional representations*. Photographs are natural representations in the sense that they represent what is there to photograph and do not depend on human intervention (even though photographers are often involved in the process), whereas hand-made pictures depend on the intentional states of painters and illustrators in order for their content to come to fruition. Nonetheless, Currie explains that representations in general do not give perceptual access to the objects they represent and that thereby photographs are not transparent.⁵⁸ However, though Currie's analysis of what kind of representation photographs are is an interesting one, Walton suggests that while the account successfully distinguishes photographs from paintings and the like, there is no reason why the schism Currie presents in distinguishing intentional from natural

⁵⁵ Currie 1991: n. 6.

⁵⁶ Currie 1991: §§IV&V.

⁵⁷ Currie 1991: 27.

⁵⁸ Currie 1995: 55.

representations, cannot amount to the same distinction offered by the transparency thesis. Walton explains that he never denies that photographs are representations of some kind.⁵⁹

Walton also provides a number of counterexamples to show that Currie's account is too demanding. For one, if the presence of an object were really necessary to seeing, we would not see stars –which have often long ceased to exist when we are looking at them and thereby cannot be said to be present.⁶⁰ Additionally, it is not difficult to generate cases where tracking objects is difficult or impossible in ordinary seeing and in uncontroversial examples of enhanced seeing. For one, take Walton's example that, when faced with an elaborate series of mirrors reflecting a carnation, one cannot easily track the carnation's relation to oneself. Mirrors can easily be arranged to confound the tracking function and since it becomes difficult or even impossible to track our location to the carnation, Currie would have to bite the bullet and claim we do not see the carnation in the reflection.⁶¹

I want to point out that Currie is also committed to the claim that disabled tracking in ordinary hearing amounts to not hearing. What is true of seeing per Currie's argument would have to be true of hearing because his function principle applies to hearing as well. But there are many occasions where tracking one's location relative to what we hear is difficult. For example, we would not hear the multitude of honking horns of New York City traffic because we could not determine where the sounds were coming from. We also lose track of where airplanes are in the sky, where low hisses are coming from and so forth. In general, we would not hear when sounds are too loud or too many. Currie does not want to say we track objects in any trivial sense, –e.g., that with the mirrors and traffic cases one can state the carnation and honking is *somewhere*– so, making a judgment of a very general location is not sufficient for seeing and hearing.

There is something appealing about describing the function of a sense organ in terms of how it benefits the body, but it is not enough to make this condition a necessary one? First of all, the story of how a function is determined for an organ to survive is a different one from what we are trying to establish. We are trying to understand how an *artificial* device

⁵⁹ Walton 1997: 60-75.

⁶⁰ Walton 1984: 252; Currie 1995: 57.

⁶¹ Walton 1997: 70.

works. The claim that the eyes would not exist without being able to track what we see is different from an analysis of various artificial devices that may not need to preserve all conditions of natural seeing. This may explain why some species had certain physiognomic virtues, but not why some devices carry *x* information and not *y*. The Currie version also imposes the tracking feature as the main purpose our sense of sight, suggesting that we would not exist without this feature in operation.⁶² However, babies and toddlers, as well as the vast animal kingdom share the ability to see and yet, lack the cognitive function of tracking objects egocentrically, not for lack of optical ability when that applies, but because of an unsophisticated sense of ego.

Since there are many animals that can be said to see without making a judgement about the location of the objects in relation to themselves, tracking may well be only *a* function of seeing without being *the* function of seeing. Additionally, the entailment relation Currie must postulate for his theory –that is, that necessity is posited by function– is not explained. Seeing could amount to a cluster concept in which there are many functions, none of which are individually necessary. In short, Currie is right to highlight the regular attendance of e-information but his view faces a lot of problems. In the next chapter, I will give a more substantial criticism about his function thesis.

§2.2 A tale of two clocks, et al

Currie does offer another troubling counterexample that, along with some variations offered by Berys Gaut, generates another kind of problem for transparency. Walton himself brings this problem to the table when in a footnote he mentions that fossils might be considered transparent. Fossils after all, preserve similarity to the critters imprinted on them and uphold a belief independent counterfactual dependent link. So, when we look at a fossil it is like looking through the stone to the critter. But in the fossil case he is willing to accept that, when we look at fossils, we have something like a causal presence to the creature.⁶³ However, I find that this case becomes the prototype for a number of similarly difficult counterexamples that can perhaps be avoided. In this section, we will look at some

⁶² Currie 1995: 65-66.

⁶³ Walton 1984: 275 n. 13.

of the cases inspired by the fossil problem and then I will offer a brief suggestion that will be expanded on in Chapter 3.

One of the problem cases is that offered by Currie. To illustrate that transparency is too broad, Currie shows how, based on the criteria outlined by transparency, one must accept the following as transparent: Imagine two identical clocks where clock A directly feeds the time to clock B so that they are always telling the same time. Since clock B is identical to clock A and because it has a belief independent counterfactual dependence on A, Walton would have to claim that one sees clock A *through* clock B.⁶⁴

Walton's reply is that the link is not counterfactually rich enough because only some features of clock A are shared with clock B.⁶⁵ However, other cases that provide a richer counterfactual link can easily be generated. But the two clock case shares in common with the fossil case, the appearance of meeting the conditions of transparency while clearly being an instance of something else –seeing a replica or mould of some object.

And, Berys Gaut offers two more of such cases that are counterfactually richer than Currie's: the first example points out the replicas of Trajan's Column at the Victoria and Albert Museum, London, at the University of Zurich, in Bucharest and elsewhere. In this case, the original column was cast in plaster for identical reproductions to be displayed at different locations without having to remove the original. Since they were cast in this way, they were produced in a belief independent and similarity-preserving manner. They counterfactually depend on the original in Rome, and look identical to it, so by the principles of transparency, we see the original column when we look at the replica.⁶⁶

In Gaut's second case he describes seeing a band of robot gorillas that are modelled after, and also electronically programmed to display the behaviour of, a band of real gorillas a mile away. Individuals from the robot group make the same noises and gestures as their real counterparts and also interact with each other in behaviour that is identical and isomorphic to the real group. Again, as these preserve the belief independent and

⁶⁴ Currie 1995: 64-65, 1991: §IV.

⁶⁵ Walton 1997: n. 47.

⁶⁶ Gaut 2010: 89.

similarity-preserving counterfactual link to the original gorillas, we must see through the robot band.⁶⁷

One should automatically have reservations about considering these cases as instances of transparency because, for example, even identical twins that are wired to behave the same in two different rooms is clearly a case of seeing a type identical situation rather than seeing twin 1 *through* twin 2. Nor do we see Harpo Marx when Lucille Ball dresses as him and imitates his every move. But transparency does not appear to make provisions for the replica problem and so that is what needs to be amended here.

First we must note that in all these cases we have a twinning problem: the clocks, fossils and plaster casts are moulds of their originals and the robot gorillas are replicas of the real gorillas a mile away so, in all these cases, original things are replicated with identical twins or more. What we in the end see is a replica of some object *x*, that could be called *x1* but it is not *x* itself. One must first ask about the counterfactual link that twinned objects share that is meant to be the same kind specified by the transparency thesis.

However, replicas have already taken this extra step. By being identical reproductions of their originals, replicas literally add to the numbers of the objects sharing type identity with the original. They produce the original *again* (or, in the case of biological twins, are issued from the same cause). Yet, when we look at twins and the like, we would be reluctant to say that we see twin A when looking at twin B even if one twin's behaviour was counterfactually linked to the other. Furthermore, it is part of the concept of a replica that one is necessarily not seeing its original when looking at a replication of it; that is, to see a replica is to see one among a number of type identical objects and not any others of that type. One does not see *x* by seeing a type-identical object *x1*, but only sees *x1*. Transparency makes a different claim: we see that particular object *x*, through a transparent device, and not a duplicate of that object as no object is being replicated.

Photographs are tricky. They are not replicas of the objects we see through them for there are clear differences between an object and the photographic paper that bears its image –

⁶⁷ Ibid.

e.g., the object is three-dimensional but the photograph of it is two-dimensional.

Photographs make no pretence to be those objects either. It is furthermore unclear what photographs reproduce, if anything. It doesn't reproduce the sense data of the object or we wouldn't be able to tell them apart. Stanley Cavell has remarked that, "the objects are too close to their sights to give them up for reproducing." One would have to reproduce the object itself to reproduce the sight of it, as it were.⁶⁸

But despite these distinctions, the replicas and moulds seem to meet the conditions for transparency. So it seems clear that for these purposes Walton's conditions need to specify the particular identity rather than a more general one so that one can say that, in looking through photographs, one has perceptual access to some specific object *x* and not just any object that looks like it. One might also argue that the causal link is different because the only object that we are counterfactually linked to is the replica, which in turn is linked to the original, but that this second link is not necessarily a transparent one. I will not attempt to refine that view here. Finally, another strategy is to reanalyse transparency in a manner that attends to the fact that transparent devices are supposed to do what eyes do, that is, provide a kind of prosthesis for seeing. Cameras are supposed to do this too, but it is not the case that moulding and replicating has a process that simulates vision for they instead simulate instances of seeing by replicating objects that cause those visual experiences.

Another strategy for the fossil problem is to attend to the technological dimension of photographs as the distinguishing feature, and as something it shares with other transparent devices. The fact that photographs come from cameras, which are made according to a design specification like microscopes and telescopes, is an important factor in its identity and will require some attention (in Chapter 3).

§2.3 Gaut and light waves

Another problem for transparency can be found in Berys Gaut's optical view. Gaut characterizes transparency as a challenge to define seeing, and particularly seeing through

⁶⁸ Cavell 1971: 20.

devices in a way that can handle Walton's slippery slope.⁶⁹ For example, if one accepts that one sees through eyeglasses, mirrors, and microscopes, what kind of principle can act as the brake between these non controversial devices and devices like photographs or even more controversially, paintings? One must assume that most paintings and drawings are not candidates for transparency, even if some future or rare occurrences may offer evidence to the contrary, but the jury on photographs is still divided. In a way, part of the challenge is whether there is another way to divide these devices if one wants to contend that photographs are not transparent.⁷⁰

With this in mind, Gaut gives an answer to Walton's challenge: his account draws attention to the fact that for humans, and other animals, seeing necessarily involves light and so, an analysis of seeing should be sensitive to that fact. Gaut proposes that light rays are necessary for seeing and while light rays are also involved in cameras and the photographs they make, the distinction can be made according to how the light rays travel from object to eye. The distinction that he draws between seeing through and looking at a photograph is made by how the light rays are intercepted between the eye and the photographed object. This will be explained further in a moment.

In Gaut's view, to see is to have a visual experience that is caused by light rays reflecting off an object and to the eye. When we look at objects through eyeglasses, mirrors, telescopes and such, the light rays may change course and bounce through lenses but those *same* light rays travel from the object to the eye through those devices. That is why those devices are transparent and why photographs are not: since seeing always involves light, and the same light rays are available when seeing through mirrors and microscopes, it follows that photographs would only be transparent if the same light rays that bounced off the object photographed made their way to our eyes. But since the light rays involved in looking at a photograph of an apple are not the very same light rays that the photographer or camera, as it were, saw that apple with, one does not see through photographs. Those light rays were in fact, interrupted by the camera process.⁷¹

⁶⁹ Walton 1984: 252; 1997: 69; Gaut 2010: 90-91.

⁷⁰ Gaut 2008, 2010: 91-92.

⁷¹ Gaut 2008, 2010: 91-92.

Currie on the other hand, is not convinced that light is a necessary condition for seeing and this is because he considers processes like echolocation to be a kind of seeing but one that is lightless.⁷² However, Gaut argues that it is controversial to claim that echolocation is seeing in the sense that we are discussing because echolocation carries very limited properties of seeing. Even though it carries what Currie considers to be an important feature of seeing, namely, egocentric spatial information, it misses information that is special to seeing like texture and colour. Nonetheless, I agree that light is not a necessary condition. Night vision or heat vision technologies do not send the same light waves to the eye. In particular, we might consider heat sensitive glasses, aka night vision goggles, which allow one to see objects by temperature variations rather than the natural light course. As these are clearly designed so that one can see in the dark amongst other things, it would be counterintuitive to suggest that since the light wave trail is missing here, that we do not see through night vision goggles.

While Gaut's proposal is a strong and intuitive one, one can discount it in an analogy to sounds and prostheses for hearing. Now there are good reasons to call the analogy to sound an illegitimate one, but I would suggest resisting that. There are differences between light and sound waves. Light waves are transverse and can travel through a vacuum, while sound waves are longitudinal and require matter in some form to transmit. Furthermore, one can say there are different object relations between them: where light waves connect eyes to objects, sounds can be argued to be events, not *objects*.⁷³ So one does not hear a bell, *per se*, but the event of the bell being rung, the ensuing compression, impact on the environment and those sound waves reaching the ear. This chain of events describes an instance of hearing quite differently from the story of seeing. Still, with reference to the object of perception, one can locate where sounds are coming from, and thus designate the locus of sound whether to the object that causes it, or the site of compression.

Regardless, these differences do not matter for this purpose because we are not talking about perceptions of either kind in vacuums. Whatever the wave-object relation is like in their respective physical theories is only partially relevant here. We are concerned with the physics only in so far as it generates the phenomena of seeing and hearing. In those

⁷² Currie 1995: 58-59.

⁷³ More of the event theory of audition in O'Callaghan 2007.

respects, they are quite similar: both kinds of waves can refract, reflect, diffract and interfere. Both light and sound waves become objects seen or sounds heard when they are received in their respective organs. Most importantly, both waves are the media by which seeing and hearing happens. Now, on Gaut's view the requirement for seeing is based on the essential property of light waves, and so, why would we not postulate sound waves as the essential medium of hearing? Insofar as light waves are essential to seeing because they are the medium for sight, sound waves are essential to hearing for the same reason.

Now, the sound analogy poses a problem for Gaut's view when one thinks about prostheses for hearing. If transparency is delegated to devices that mediate the passage of the very same light rays between object and eye, then the same must be true of sound. The same sound wave must travel from the sound source to the ear. In many cases, this link is preserved such as when one hears first-hand or through a number of devices. In some cases, the same sound waves that travelled from a bell reach our ears through transparent devices like megaphones or cans on a string. However, does this mean that the sound wave cannot undergo any changes in its travel through a device? If it cannot undergo changes, say, become digitized or translated into electronic frequencies, then one does not hear through most modern devices like microphones, or cellular telephones. These devices, at least in their present state of design, alter the sound waves by way of digitizing them. Hearing aides, the very exemplar of a hearing prosthesis, use digital technologies. In these cases, and many others, the original sound waves have been digitized and digitization changes the waves into a stream of numbers. That is then processed into the same sound for the ear. But those same waves are no longer in contact with the ear.

In an analogous case for seeing, the current technology for enhancing vision works quite similarly. The Argus II, the most notable model, is a retinal implant that improves sight that has been degraded by a disease called retinitis pigmentosa. This disease affects the light-sensing photoreceptors and the prosthesis improves the condition by artificially producing the light in one's vision field. In order to do this, the device has two co-dependent elements: 1) images are captured by a video processing unit, sent to the spectacles on which they are mounted, which then wirelessly sends the corresponding signals to 2) a chip which is implanted near the retina as a receiver. The implant is

outfitted with a 60-electrode array that stimulates the healthy photoreceptors and in turn, the optic nerve to the brain.⁷⁴

This device causes a problem for Gaut's optical theory. This is a genuine prosthesis for seeing that does not preserve the stream of the same light wave from object to eye. That stream is interrupted by a video camera that transmits the light information on to be wirelessly transmitted. That transmission has been modified into signals, and then sent wirelessly to the implant only to be modified again by the electrode array into pulses of electricity, and so on. The light wave has changed at every stage but this is integral to the function of the retinal prosthesis.

Having analogous instruments shows that, for our purposes the sound analogy obtains and that furthermore, that for both kinds of prosthesis the same-wave requirement appears to be too strong. And thus, this reopens the question for photographs: if on the one hand, the sound and light waves cannot undergo changes along the way, then the requirement is too strong, because there are real life examples of prostheses that depend on a variety of signal modifications to function properly. But if these respective waves can undergo such changes along the way, then it should follow that light rays can undergo a variety of other changes, such as being digitized, and then we can surely see through photographs.

§2.4 Egocentric spatial information again

We previously examined Currie's proposal that the function of seeing is being able to track one's location relative to objects we see and subsequently found that it had some significant problems. Cohen and Meskin share this intuition with Currie and a number of other philosophers of perception,⁷⁵ and agree with Currie insofar as they hold seeing *necessarily* involves egocentric spatial information (henceforth e-information), that is, information about where one stands in relation to the object seen. However, they sidestep one of Currie's major problems by removing the *doxastic* constraint, that is, that one does

⁷⁴ Steenhuisen 2013; Graham-Rowe 2011; Second Sight *accessed* 2014.

⁷⁵ Gareth Evans 1992, 1985; Alva Noë 2004, 2006; Christopher Peacocke 1992: Ch. 3; Robert Briscoe 2009; Breuer 1997; Campbell 1994; Grush 1998, 2000, et al.

not need to make a *judgment* about one's egocentric spatial relation to the object.⁷⁶ In effect, being able to track the objects of sight is important but not necessary in all cases of seeing. It suffices to define seeing as *carrying* information about where we stand relative to the objects we see without necessarily being able to *track* or *judge* according to that information. When looking at a complex series of mirrors that would confuse the tracking function, one still sees the carnation simply because mirrors *carry* e-information regardless of whether we can make a judgment on the matter or not.

By making this amendment, Cohen and Meskin can avoid cases like that above and others that plagued Currie's account, such as the sound analogues or the example of other animals that have less sophisticated sight-related cognitive functions. Cohen and Meskin thus have preserved the condition of e-information and use this analysis as a basis for what they consider to be the epistemic value of photography. In the next chapter, I will look at their theory with greater detail and show how they must face a host of other problems to preserve the condition of e-information as a necessary one. This consequently shakes the foundation for their theory on the epistemic value of photographs. In light of this, and with a mind to preserve transparency, I will offer an alternative.

⁷⁶ Cohen and Meskin 2004.

II



EPISTEMIC VALUE OF PHOTOGRAPHS

Transparency, E-Information & A Defect Hypothesis

In the last chapter, I introduced Cohen and Meskin's attempt to salvage the egocentric spatial information condition for seeing but left the criticisms for this chapter because their proposal is linked to what they consider the epistemic value of photography. In this chapter, we will look at their thesis more closely to show how their account has significant foundational problems, which I believe justifies my provision for an alternative theory.

Cohen and Meskin believe the epistemic value of photographs cannot be founded on what they consider to be the mistaken proposals of Bazin and Walton.⁷⁷ Walton insists that transparency does not mark his position on how informative photographs are, nor subsequently does it comment on their epistemic value.⁷⁸ I will here show that transparency is an important foundation to stabilize the epistemology of photography per Cohen and Meskin, and that this is compatible with their claim that photographs do not carry e-information. That is to say, that despite Cohen and Meskin's compelling account of photographs being unique in their being spatially agnostic informants about the visually accessible properties of objects, their proposal mistakenly jumps to the conclusion that photographs are thereby opaque.

Before I proceed, I should offer a strategy for this chapter: I will start by showing that Cohen and Meskin's account has two distinguishable goals: first, to undercut the transparency thesis and second, to offer an account of the epistemic value of photographs. Moreover, I will show that the latter is independent of the former. Regarding their first goal, they dispute the transparency of photographs on the basis that photographs do not carry e-information. But they are wrong in assuming that because e-information is a necessary condition for seeing that thereby it must be available in prostheses of seeing.

⁷⁷ Cohen and Meskin 2004, 2008.

⁷⁸ Walton 2008: 113.

I will show other fatal problems with the general e-information claim, and since key conditions of Cohen and Meskin's account fail to secure their thesis, the epistemic value of photographs cannot be explained by way of their account. In the end, I hope to once and for all extinguish the thesis that e-information is a necessary condition for prosthetic seeing and perhaps not even be necessary for ordinary seeing. However, I am in agreement with Cohen and Meskin that the epistemic value of photographs rests in their being spatially agnostic informants about objects, because that feature is what gives the long observation-time photographs can offer. That is indicative of the nature of knowledge had by photographs.

So, in short, I will reconcile two claims about photographs extracted from these two conflicting accounts:

- 1) that photographs are transparent, thereby like other enhancements for seeing
- 2) that photographs do not carry all the information typically available to seeing – particularly, egocentric spatial information (e-information).

In reconciling these two claims, another epistemology of photographs will emerge. I will argue that the crucial difference between photographs and paintings is that we maintain perceptual contact with the objects of photographs but not with objects of paintings and this points to their distinctive epistemic values.

§1 Cohen and Meskin's view

Before proceeding, I will here give a detailed account of Cohen and Meskin's view. The first and most crucial proposal is what they offer to revise Currie's function thesis that the function of seeing is to track one's location relative to what one sees. In Currie's view, egocentric spatial information, aka e-information, is a *doxastic* condition, which is to say, one can make a *judgment* about the object's relative location to oneself.⁷⁹ To avoid examples of confounded locating of objects, Cohen and Meskin's view is a *non-doxastic* one: one need not make a judgment about the location of the objects one sees. Instead, it suffices if the

⁷⁹ Cohen and Meskin 2004: §II.

device one sees through is such that it reliably carries e-information about objects seen through them.⁸⁰

§1.1 carrying e-information nondoxastically

As a preliminary step, Cohen and Meskin stipulate e-information is necessary to seeing and thereby, that transparent devices must carry e-information. Then, in order to establish that some devices carry e-information, and others not, Cohen and Meskin explain that a transparent device will be *disposed* to carry some information, here namely e-information, and do so *reliably* by virtue of an appropriate transmission of that information. First, we need to understand what it means for something to be *disposed* to carry some sort of information. Then, we need to look into their notion of *reliability*, which involves an audit of the process of the device.

The basis for the non-doxastic account is based on Fred Dretske's compelling theory of knowledge and perception in *Knowledge and the Flow of Information*, where knowledge is analysed in terms of the transmission of information. Cohen and Meskin have adopted the Dretskean view and for their purposes analysed the reliability of a device (at carrying x information) as based on an objective probabilistic link that is counterfactual-supporting. To illustrate what is meant by a counterfactual-supporting probabilistic link, consider an everyday instrument we trust, like the thermometer. We believe the thermometer to be reliable at representing temperature and it is in fact reliable, in part, because the counterfactual link between temperature and its representation on the thermometer is preserved. The temperature reading on the thermometer depends on the temperature and would have differed had the temperature differed. That is the counterfactual-supporting aspect of the equation. The probabilistic part can be described as follows: the probability of a thermometer reading r (as being dependent on temperature t) is such that the probability of r successfully representing t outweighs the probability that r will not represent t. Thermometers are more likely to represent temperature accurately than not. In short, thermometers depend on temperature to represent it, and this link is preserved more often than not.⁸¹

⁸⁰ Cohen and Meskin 2004: 198-199, 202.

⁸¹ Cohen and Meskin 2004: §IV; 2008: 2-3.

Thus we can say that a positive probabilistic result, however that gets cashed out, and in combination with the preserved counterfactual link, indicates that devices like thermometers are *disposed* to representing information like temperature reliably and it is because of this disposition that thermometers are considered reliable when it comes to carrying that information. Moreover, this positive probability result is indicative of the reliability of a *process-type* rather than simply a test of individual tokens. The process by which a thermometer provides a reading of temperature is reliable and can thus be considered reliable in, say, other devices. And if a device has been determined as reliable at carrying x-information –that is, more likely to carry information than not carry it– it is a reliable carrier of that information even if individual tokens sometimes fail to carry that information. Hence, thermometers that are broken, calibrated wrong, and so on, do not pose a challenge to the whole of thermometer-type instruments.⁸²

Additionally, we can understand two ways to cash out the analysis of types in terms of its tokens. On one hand, a process type carries some x-information if its tokens typically do, or to put it in dispositional terms, if the tokens are disposed to carry that information. Most thermometers are reliable according to these conditions, since most thermometers are reliable representations of temperature, so the category of thermometer can be treated thus. The other way is also true: the tokens of the type in question are disposed to carry x-information if the type has been determined as a reliable one, by virtue of being more likely to carry that information than not carry it. If all the thermometers in the world vanished except for a few that work perfectly, and these become the prototype for a second generation of thermometers, that generation would be reliable on the basis of the prototypical few.⁸³

Contrariwise, a negative probabilistic result renders the process-type of a device unreliable. Had the billions of thermometers tended towards mis-information in some way, thermometers would have no currency. While not made explicit in Cohen and Meskin's account, one can infer that they mean to say that if a device is more likely not to carry x-information than carry it, then it is not a reliable source of that information even if it

⁸² Cohen and Meskin 2004: 200.

⁸³ Cohen and Meskin 2004: 201.

carries that information occasionally. So that on the rare occasion that some device, like one of the photographic variety, carried information like e-information, the whole type would still not be a reliable source of that information.

This part of Cohen and Meskin's analysis functions in part to fortify the e-information condition against fluke cases where photographic devices might meet the condition. This way, some *token* instances of photographic devices carrying e-information would not render the device *type* reliable at carrying e-information. Even if photographs could on occasion carry e-information, the photograph-type depictions are not so disposed as, on their view, photographs fail more often than not to carry e-information and so, they are not reliable sources of e-information. And since Cohen and Meskin stipulate that e-information is necessary for seeing, and also thereby required of prostheses for seeing, photographs are not transparent.⁸⁴

§1.2 Photograph types and paintings types

Photographs are thereby distinguished on the one hand, from devices like mirrors, telescopes, microscopes etc., because they fail to carry e-information –information that is typically carried by genuine prostheses for seeing. On the other hand, what remains to be seen of Cohen and Meskin's view is how it distinguishes between photographs and paintings since a consequence of rendering photographs opaque is that transparency no longer distinguishes them from paintings.

Cohen and Meskin propose that the distinction is found in their process types and subsequently offer an analysis of the information that photographs carry. Although photographs fail to carry e-information, they do successfully carry information about the visually accessible properties of objects, also called *v-information*.⁸⁵ More specifically, *v-information* is information about objects observed by sight such as the appearance of colour, texture and shape. The features of objects may be experienced in a variety of other sensory modes: for example, an orange feels rough, smells piny, tastes sweet, and so on. However, the fact that an orange looks orange is a property that is exclusively observed by

⁸⁴ Cohen and Meskin 2004: 203-204.

⁸⁵ The term is coined in Cohen and Meskin 2008: 4.

seeing. The shape and texture of an orange can also be seen, while also observed by touch. But seeing the shape and texture bears visual information about the orange, rather than tactile information.⁸⁶

In contrast, paintings may provide v-information but they fail to do so in virtue of a counterfactual-supporting objective probabilistic link. Paintings after all, require a subjective link. Paintings may occasionally succeed in carrying v-information but the process type of paintings precludes that they do so reliably. Thus, photographs differ from handmade pictures like paintings because they are disposed to furnishing v-information about their objects, whereas handmade pictures are not so disposed. Moreover, it is usually the case that devices carry v-information and e-information in tandem. This is part of what makes photographs special: they carry v-information *sans* carrying e-information. Cohen and Meskin conclude that what is epistemically salient about photographs is that they are spatially agnostic carriers of v-information.⁸⁷

Let us take a moment to describe v-information better. V-information is to be understood as information that is uniquely visual such as colours, textures and shapes of things as they are seen. Texture and shape are available, for example, to the sense of touch as well but the feel of texture or shape is distinct from the sight of these features. For example, the texture of a sisal rug has a distinctive visual appearance from that of linoleum; it has a certain colour, pattern, texture, etc. all of which informs the visual experience of that rug. But furthermore, this is a different kind of information from, say, what sisal feels or smells like, as being rough to the touch or grassy are information types read by another sense. One can also get visual information from a description of a sisal rug but this is, again, not v-information, which is specified to be available *visually*, rather than audibly by description. So, v-information about sisal is only available in visual experiences of sisal and can only be accessed visually, just as there are tactile-specific, olfactory-specific experiences and so forth.

A major problem regarding the v-information analysis will have its own dedicated section below but for now, I will call attention to another one: photographs are a reliable source of

⁸⁶ Cohen and Meskin 2004: 204; Cohen and Meskin 2008: 4.

⁸⁷ Cohen and Meskin 2004: §V; 2008: 3-5.

v-information, but why wouldn't paintings qualify? Cohen and Meskin pre-empt this difficulty as posed by the example of veridical paintings –i.e., paintings made to represent actual events, and which, in effect carry v-information about the objects they depict. By Cohen and Meskin's criteria, veridical paintings thus also provide information about the visually accessible properties of objects (v-information) in the appropriate way and are also spatially agnostic carriers of v-information. What then differentiates photographs from veridical paintings?⁸⁸

To handle this, Cohen and Meskin suggest that viewers bear certain attitudes towards the reliability of certain categories of devices based on the type of processes they are. The fact that photographs belong to a process type that reliably furnishes v-information about their objects in principle, and so they are more likely to carry v-information than not in practice, means viewers keep this in mind and find photograph-type devices reliable at furnishing v-information. On the other hand, in general the process type of paintings does not reliably furnish v-information despite the exception of veridical paintings. As such, a veridical painting will not be treated like a photograph but as member of the less reliable type that they belong to.⁸⁹

This explains why viewers of photographs consider devices of the photographic category to be reliable sources of v-information but do not bear the same attitudes about paintings. The epistemic value of photographs is then that photographs are spatially agnostic sources of v-information and additionally, this is buttressed by viewer attitudes about the reliability of the device type.⁹⁰

Another main function of this attitude condition is to disarm scenarios offered where photographs might fall into a category of ambiguous evidentiary devices –i.e., those which sometimes carry reliable information and sometimes not. While the process-type account that Cohen and Meskin offer is relevant to making a distinction between photographs and paintings, the distinction they make is dubious: what seems to distinguish the process type of photographs from paintings are the background beliefs that viewers have about their

⁸⁸ Cohen and Meskin 2004: 205.

⁸⁹ Cohen and Meskin 2004: 205.

⁹⁰ Cohen and Meskin 2004: §VI.

respective process types. Simply put, what is different about paintings and photographs is that people have different attitudes about how paintings are made and how photographs are made, putting more credence on the latter. Here Cohen and Meskin make provisions for contingency: they admit that the schism between these device types partially depends on what the general public knows about them, and that this can change over time.⁹¹

However that cashes out, it remains problematic to claim that background beliefs about the processes offer a justified distinction between them because background beliefs about the process-type may be wrong. Take, for example, navigational equipment in a world whose inhabitants believe it to be flat but which is actually spherical. The equipment reliably confirms information as per a flat world and is found reliable by users of that equipment on the basis that they hold the false belief that the world is flat. Alternatively, suppose the equipment furnishes reliable information true to the spherical shape of their world but the inhabitants believe this information to be false. In both cases, viewers hold background beliefs about the flatness-preserving and roundness-preserving process-types, but in neither case is the equipment any more or less reliable just because these users bear certain attitudes about the process type. This attitude condition then cannot account for the difference between veridical paintings and photographs. Cohen and Meskin admit that their account is based on contingent rather than necessary features of photographs, based on the current attitudes.⁹² But if there were a better reason to differentiate the two types of pictures, it would be preferable. Their account misses a difference that I believe to be more substantial than the attitudes of viewers being as they are: Photographs do not have the vulnerability to represent hallucinations that paintings do. That is a far more convincing explanation for why viewers' attitudes differ, but for which their theory makes no provision.

§2 Problems for e-information accounts

Let us review the main body of Cohen and Meskin's account. They suppose that the process of seeing carries e-information and that photographs do not carry this information. On this basis, photographs cannot be genuine prostheses for seeing. Cohen and Meskin

⁹¹ Cohen and Meskin 2004: 206-207.

⁹² Cohen and Meskin 2004: §VII.

additionally argue that this does not diminish the epistemic value of photography but in fact illuminates what that value is. Seeing also involves the transfer of information about the visually accessible properties of an object (v-information), such as information about the object's shape, colour and texture. This kind of information is typically only available alongside e-information and devices that carry v-information usually do so in virtue of carrying e-information, so this peculiarity offers up the epistemic value of photographs.

There are a number of problems with this view. The foremost problem is the mystery around the necessity of e-information, which will prove to be problematic. In light of this, the following sections will show how e-information is not a necessary condition for seeing through prostheses, and questionably necessary for ordinary seeing. I offer four major problems for Cohen and Meskin's theory (and in effect, also Currie's) that support my hypothesis. In §2.1, I will simply analyse on what grounds the belief that e-information is necessary for seeing is founded to show that the grounds are dubious; in §2.2, I will conduct further investigation into what v-information really amounts to in order to call into question whether it couldn't suffice for seeing on its own; in §2.3, I revisit the analogy to sound prostheses, where e-information is not carried in non-controversial devices for hearing, thereby challenging that e-information is necessary for visual prostheses. Finally, in §2.4, I will show how photographic equipment can be made to furnish e-information, but that ultimately this illustrates how to devalue the technology. Because such a redesign would be useless, one must consider the lack of e-information to be an important deficit that should not be ignored when auditing the epistemic value of photographs. This last section will entitle me to defend the claim that what is special about photographs is that they are, as Cohen and Meskin were right to suppose, spatially agnostic informants but that also, *contra* Cohen and Meskin, that the reliability of that information rests on their being transparent.

§2.1 Motives for E-information

It is an important first step to look into what motivates Currie's and Cohen and Meskin's commitment to the belief that e-information is necessary for seeing. This is because the e-information condition is central to their proposals, and has been central to many accounts of seeing. Yet the grounds on which Currie, Cohen and Meskin base the *necessity* claim is rather mysterious. Currie states that tracking one's location in relation to objects of sight is

the *function* of seeing. But why that amounts to e-information being a necessary condition in all cases will be investigated. And, since tracking has been shown to be too stringent a requirement for seeing, Cohen and Meskin stipulate that it suffices if e-information is simply carried by the device, and by virtue of the device being disposed to carry it. However, it remains unclear why e-information must be carried by any prosthesis for seeing. Both versions insist on the necessity of e-information because it is available to ordinary seeing, but how that becomes a necessary condition for prostheses for seeing is remains to be seen.

It is important to keep in mind that the claim Walton offered, and that I defend, that photographs are transparent, is not a claim about the identity of photographic seeing with ordinary seeing. It is rather that photographs are equivalent to genuine prostheses for seeing, –i.e., devices that are commonly used to enhance vision. So it is not necessary that photographs meet all the conditions for seeing anyway, but that they meet the conditions for seeing with prostheses. I will later show an important difference between these. Whether the function of seeing is object-tracking, or a disposition to carrying some information by which tracking might be possible, there is still not enough to justify the inference that a genuine prosthesis must also preserve this information.

a) Necessity by function

Let us begin with Currie's claim that tracking e-information is the function of seeing. Currie's thesis rests on the premise that e-information is bound up in the function of seeing and that function entails necessity. Using the standard view of functions, –i.e., that the function of x is y, if x would not exist without y– Currie understands e-information to be a trait integral in some way to preserving the biological item.⁹⁵ For example, the function of the brain is to regulate impulses in the body and without the brain doing just that, the body would fail and in the end, so would the brain. It is easy to see that being able to see where things are, and what things are coming, is beneficial to our survival. This allows us to trace predators or keeps us from getting hit by buses.

⁹⁵ Currie 1995: Ch. 2.

But it is not clear how the transmission of e-information is *the* function of seeing by this account because not only are many other kinds of information available in seeing, but tracking objects can happen in a variety of ways that are not sight specific. There are a number of ways we use our senses to orient ourselves in our environment: We use touch to feel our surroundings in dark places, and listen to sounds to locate their sources as well as to identify their causes. Depending on what the situation calls for, one might favour one sense over another to track e-information, just as it is more efficient for dolphins to track objects under water with sonar than with vision because there sound travels better than light. If e-information is the function of seeing, it is not exclusively so. And if it is not exclusive to vision, one may ask if its functional role to most of the senses entails a necessary occurrence in every instance of perception. I would like to suggest that as the function of perceptions not exclusive to vision, the activation of tracking e-information could occur in any sense without necessarily occurring in all senses.

Consider the following example: You have entered a place like Walton's funhouse of mirrors and begin to hear a sound in the distance. As a Hitchcock fan, your mind quickly suggests you should perhaps worry if you are in danger. Then you find yourself in a room with mirrors all around. There you are terrified at the sight of multiple reflections of someone that resembles Peter Lorre. You cannot determine where he is in relation to you with the mirrors so you strain your ears to determine that he is to your right somewhere but not particularly close. You use this opportunity to study his face in the mirrors to see if you can gauge whether his intentions are sinister or not. To your relief, you are able to see that he smiles and waves at you, and then picks up his walkie-talkie to announce your person has been located in the Hall of Utter Confusion.

Here it appears that there are cases where e-information might manifest in only one of the senses, and it need not be seeing. So, a function does not seem to entail the presence of that feature in all instances of individual senses. It should follow that even if tracking e-information is the function of seeing, it does not entail that all instances of seeing would carry e-information.

Furthermore, there is room to argue that vision that never carries e-information may be considered defective in some way, but it would nonetheless be a stretch to claim a defect of this kind means the optical apparatus has ceased to function. It seems entirely plausible

that one can see the colours and shapes of things without a sense of their place in relation to oneself. Hence, defective vision might still be informative in a visual way.

Now, many genuine prostheses for seeing are in a sense *defective* in some way –e.g., microscopes are defective in providing macroscopic information, near-sighted glasses cannot provide clarity of close range objects, and so on. In short, those devices fall short of the normal range of visual information in order to offer another sort of visual information. Subsequently, a device's defects are not enough to undo its candidacy as a genuine prosthesis: this is because some defects from ordinary seeing –in the form of missing information– are essential to enhancing other information. This means that one can see even when that information is missing because it is replaced. There may in fact be information that cannot be replaced and in that case, when it is missing, one fails to see. But so far, the fact that e-information is crucial to seeing has not yet been proven.

b) Necessity by disposition

Cohen and Meskin on the other hand, while they might be motivated by the function thesis, defend the necessity of e-information to seeing on the grounds that seeing is more likely to carry it than not, in other words, by their dispositional analysis. In contrast to Currie's view, where tracking e-information is the function of seeing, the Cohen and Meskin view claims that the process of seeing is simply *disposed* to carrying e-information. Consequently, since the process of seeing is disposed to carrying this information, genuine prosthetic devices for seeing will need to preserve the disposition to carry e-information too. Furthermore, even though some devices will on occasion fail to carry e-information – and really, they are only meant to carry it more often than not, rather than always– they may still be qualified genuine prostheses for seeing in principle, if their process-type has proven to be disposed to carrying that information. Inversely, one can suppose that some devices will occasionally succeed at carrying the appropriate information but are not genuine prostheses for seeing because their occasional success does not qualify them to be reliable carriers of e-information. This means that not all instances of seeing need to carry e-information.

However, some of the inferences made and that one can make are rather spurious. In particular, how do we make the inference from establishing said disposition of natural

seeing to necessity for prosthetic seeing? In other words, we should not presume that if the process of seeing is disposed to performing in a way that carries e-information that this alone explains how e-information is a necessary condition for seeing, or that this carries through for genuine prostheses for seeing. In short, many of the steps from disposition to the conclusion of necessity are questionable on their own.

For one, what if the disposition of something is simply systematically blocked? For example, one's being disposed to having psychotic episodes might be blocked by the appropriate sort of medication but this does not undo the disposition to having psychotic episodes. However, the medication tips the probabilistic scales so that it is more likely that the episodes will not manifest. So one has to ask, under what conditions is a feature of something making an appearance or not. In the case of natural organs, dispositions might be altered by external causes, some of which are intentional, like administering medication for the betterment of a patient.

In the case of man-made devices, systematic blocking might have a significant motive too, and this might inform the very design of a device. As we have already noted in response to the function claim, the lack of e-information might just be a necessary by-product of eliminating one kind of information that seeing is typically disposed to carry in favour of enhancing some other visual information that may, as it were, *naturally* be unavailable (as with the microscope example). So even here, there is a suspicious inference made; that the disposition of ordinary seeing to carry e-information gives sufficient reason for being a necessary feature in prosthetic seeing.

In granting that Cohen and Meskin's account side-steps this particular problem, the dispositional analysis still fails to adequately qualify the e-information thesis because disposition does not entail necessity. For example, the disposition of a human is to perform rational acts, but it is not the case that when they fail to do so, they are not human. So again, what qualifies as the relevant kind of information? A prosthetic hand will still act as a prosthetic for a hand even though it fails to carry tactile information. So a dispositional account does not offer enough to substantiate the claim of necessity.

It seems that the intuition Currie, Cohen and Meskin want to build on is based on the inference that remains unclear, undermining the very basis for claiming the necessity of e-

information. Meanwhile, Cohen and Meskin's second condition is suspicious as well, leaving their proposal of epistemic value of photographs in need of repair. Without an explanation for the necessity of e-information, neither account is sufficient for excluding photographic devices from the class of genuine prosthesis for seeing.

§2.2 Robustness of v-information

In this section, I will put emphasis on the second feature of seeing that Cohen and Meskin offer, called v-information, that is, visual information about objects given visually. I want to show that in general, where v-information is present without e-information, one should really be more reluctant to deny these as instances of seeing. This is because the very definition of v-information describes it as visually acquired information.

In a real life example, a disorder called Balint syndrome has been pointed out to Cohen and Meskin, as an example of seeing without e-information. It is not clear whether it is that Balint syndrome patients simply cannot articulate their experience of spatial information or if it is an inability to cognize that spatial information, though they are probably able to perceive it. But Cohen and Meskin admit that if there was a disorder similar to Balint syndrome, such as what they name Schmalint syndrome, where the defect is in fact in vision, so that no spatial information is carried, and thereby neither egocentric-spatial information, they would have to bite the bullet and say Schmalint patients do not see.⁹⁴ But why shouldn't v-information be rich enough to suffice for seeing?

Perhaps we need a better diagnosis of v-information so let us take a moment for further analysis here. Cohen and Meskin say that v-information is information about the visually accessible properties of objects that is not always accessed but always available. This is in keeping with the nondoxastic principle they offer, that one needn't be able to make a *judgment* regarding said information. It is also understood to be veridical information, rather than perhaps fictional information about objects. V-information is to be understood as not simply visual information about objects, but more specifically, this is visual information *had visually*. This is to be contrasted with visual information one might get from a heard description of a landscape, which generates visual imagery for the

⁹⁴ Cohen and Meskin 2008: 7-9.

imagination but by an auditory route. One can get information about the colours, lines, shapes and textures of objects from descriptions, and one can get some of these features from other sensory modes. One can hear a rough texture, feel shapes of objects, and so on. But it is quite another thing to get this information about objects from the eye. So, v-information by contrast, is information about colour, line, shape and even texture of objects specifically available in a visual mode.

What is odd about Cohen and Meskin's account becomes apparent here: according to them, when v-information is accessed it may or may not count as seeing, and this depends on whether it comes along with e-information. However, if accessing v-information means having an experience of the visually accessible properties of an object, and more significantly, accessing those properties in a visual way, then we must have a *visual experience* of the object's properties. It is otherwise nonsense to claim that we get visual information visually but fail to have a visual experience. And, if v-information provides sufficient information for counting as a visual experience, but does not amount to seeing, then of course some account of the difference between visual experiences and seeing is required.

Now this difference doesn't promise to offer an answer either: having a visual experience can be a variety of things, but for our purposes, can fall under the category of hallucinations, illusions, or seeing (which includes seeing through a prosthesis). In other words, a visual experience can mean, respectively, seeing something that is not really there, seeing something in a tweaked way and seeing something that is really there, perhaps through a device. There are nonveridical visual experiences and veridical ones, the latter of the two is where genuine seeing and seeing through accepted prosthesis for seeing belong. Now surely a photograph is not like a hallucination, nor an illusion, (though it might be said that it gives the illusion of literally seeing an object). Regardless, Cohen and Meskin do not want to claim that upon accessing v-information through photographs we are having an experience of something that is not really there. In fact, if they considered the experience of v-information through photographs a hallucination-type experience, it would undermine any claims they make about their epistemic value and they do trust that photographs usually carry veridical information about objects. Denying this is ultimately antithetical to their project: Why trust a photograph for visual evidence about objects if it is like a hallucination or an illusion?

So the upshot here is that if v-information is not as rich as I had first described it –that is, as being sufficient for generating visual experiences about object-properties– then it seems that the account of v-information is trivial and thereby diminishes the thesis about what the epistemic value of photographs is, as per Cohen and Meskin’s account. However, if it is as rich as I have described, then visual experiences are tantamount to seeing and v-information is thereby sufficient for seeing. Consequently, the account of e-information is unnecessary and photographs no longer need to meet that condition to count as a genuine prosthesis for seeing.

§2.3 Sound analogy again

As it stands we already have good reasons to think that e-information is a dubious, if not expendable, condition for prosthetic seeing if not for ordinary seeing, especially if 1) the gains are another set of information otherwise not readily available to seeing or if 2) v-information is sufficient for seeing. However, a more conclusive test of the necessity of e-information can be made by an analogue to sound. Hearing is a natural candidate for an analogy and this is because hearing can also perform the function of tracking one’s relation to sound sources. For example, the sound of falling pots and pans can be sourced as coming from behind. For Currie’s view, where it is expected that one can track one’s location with respect to the objects perceived, we showed how a problem arose when we imported sound for the *doxastic* version. While tracking is possible in many cases of hearing, and there are even more developed processes for tracking e-information such as echolocation and sonar, being able to source sounds is not always possible. The source of very loud, very many and very quiet sounds may simply elude us and quite often they in fact, do. For example, we cannot track where the sound of a loud explosion comes from.

On the other hand, the *nondoxastic* version of e-information offered by Cohen and Meskin, which doesn’t require that one can make a judgment about one’s orientation with respect to the objects of perception, can sidestep this problem. This is because it is only required that e-information about sounds would be carried from source to hearer. One need not track the location of sound objects and so the theory is not subject to the problem of elusive sound objects. To take the analogy further, for the nondoxastic view recordings of sounds are equivalent to photographs, which are, as it were, recordings of sights. Like a

photograph, a sound recording preserves information to be transmitted, which is accessible sense-specifically and most importantly, fails to carry e-information about the source of the sound. For example, a sound recording of The Who performing at the Isle of Wight does not *per the sound recording* tell us where The Who stand in relation to us as we are hearing it –they are not now at the Isle of Wight (or even The Who anymore). So, Cohen and Meskin contend that as photographs provide visually accessible information about objects (v-information), sound recordings maintain *audibly* accessible information (a-information) without offering any information about the location of what was recorded. Like photographs, sound recordings are spatially agnostic informants and not genuine prostheses for hearing. Now I think it seems far less intuitive to claim that one does not hear The Who when listening to a sound recording but I am willing to accept the sound recording account that Cohen and Meskin provide for the moment.⁹⁵

However, while proponents of the e-information thesis might accept that we do not literally hear The Who in sound recordings, on the basis that e-information is not made available, one must also consider other spatially agnostic devices that transmit sounds. One especially troubling example is the telephone: when having a conversation on a telephone, the location of the speaker on the other end is not available. There might be an urge to claim that the sound carries that information through the complex network of telephone lines, but it seems impossible to defend that telephone lines carry spatial information in this way. Furthermore, this is also not the case with mobile telephones to which we categorize under the same class of devices, as these receive sound information as signalled through any number of towers. Are we willing to say that we do not hear our interlocutor on the other end of the telephone line?

It seems to me that either we are hearing through a telephone and this obtains despite the lack of e-information, or Cohen and Meskin will hold that we do not *literally* hear through telephones, or other similar spatially agnostic devices like baby monitors, karaoke machines, microphones, and megaphones. But this seems to suggest that hearing can take several forms, some of which are enough like hearing to be comfortably called hearing, even if not technically *literally* hearing. In this case, one has to wonder why photographs would not fit into the seeing equivalent of this intermediate position. Examples like these

⁹⁵ Cohen and Meskin 2008: §4.

render the move that Cohen and Meskin made less convincing, though perhaps Currie, Cohen and Meskin will still want to make a bullet biting claim that what happens by way of these types of devices is not hearing at all. But then, it seems as though what counts as hearing becomes even less intuitive than the claim of seeing through photographs.

Another possible objection that Currie, Cohen and Meskin could make is that the analogy to sound is inappropriate, and there are two ways for this move to go: on the one hand, they could argue that e-information is exclusively necessary to seeing and only seeing while not the case for hearing. This option has its appeal because at face value, there are salient differences between seeing and hearing and one expects this to point to their respective epistemic salience. To investigate this, one must step back and look again at what motivates the e-information condition to begin with: the apparent basis for necessity is that seeing is disposed to carrying it, which means seeing carries it more often than not. As such, this condition would apply to hearing only if hearing was disposed to carrying e-information as well, –and, as it so happens, hearing does.

Examples include echolocation, sonar, and even blind humans are known to have an enhanced auditory tracking ability. In cases like echolocation and sonar, it seems a matter of genuine necessity to those kinds of perceptions that e-information is available, because if tracking is a function of the process-type, it seems to obviously contribute to the overall biological fitness of bats and dolphins. Unlike with human seeing, failure to carry e-information significantly diminishes any spatial information that would be available to creatures that depend on this for navigating space and it is in any case, available to hearing as well. Then, insofar as one wants to claim e-information is a necessary condition for seeing on the basis that it is usually available to seeing (or the function of seeing) one must accept analogies to other kinds of perception for which e-information is usually available (or the function of).

(Note: When I describe e-information to be available because one can track it, I am not ignoring the nondoxastic version. These examples apply to both e-information versions since if the more stringent doxastic condition is met, it follows that for the less stringent version, the condition obtains. It is a precondition of being trackable that the information is available.)

The second route to disanalogy is in distinguishing seeing and hearing in special way. While differences can always be found in analogies, this analogy obtains because what is relevant is whether the *similarities* are of the appropriate kind. We have already observed that neither disposition nor function is enough to differentiate seeing and hearing, and in response to Gaut's optic theory in Ch. 1, I have also shown that the physics of seeing and hearing, particularly in relation to perception, are sufficiently the same.

Had there been sufficient grounds to consider e-information a necessary condition for ordinary seeing, some grey area would have remained as to whether one could import that necessity for *prosthetic* seeing anyway. However, the point is now moot: there seems to be no reason for preserving the necessity of e-information (for ordinary seeing or hearing) and subsequently, e-information cannot thus be held a necessary condition for prosthetic seeing.

§2.4 Two cases of e-information in photographic devices

In this section, I want to show how photographic equipment can be made to furnish e-information in order to examine what conditions make these successful occasions a rarity. I offered two cases to Cohen and Meskin in another paper illustrating how the process-type of photographs, as products of a camera, can furnish e-information and how photographic devices can furnish e-information if they needed to. However, I will review these here for a different goal, paying particular attention to the second case. The first case gives an everyday example of e-information had by cameras, but the second case is of a modified camera-based device that is somewhat useless in comparison to spatially agnostic counterparts. This allows me to illustrate that photographic devices, with still or moving images, offer the best information they can, based on what information we need most. The kind of information we need has a direct effect on the design constraints and subsequent virtues of a photograph and this helps to highlight other problems with Cohen and Meskin's view.⁹⁶

The first case involves a faulty digital camera that does not display an image on the screen until the picture is taken (as opposed to a properly functioning display screen that works

⁹⁶ de Asis 2008.

as a viewfinder for digital cameras). Once the picture is taken however, the image is fixed on the display screen. This sort of defect is commonplace with digital cameras that have been dropped a couple of times. The case I offer involves using the camera in a particular situation. When one is in a room that is too dark for the naked eye, one can use this camera to take pictures, which in turn appear on the display screen and these images can subsequently be used to navigate the room towards the exit. Being able to do so means the picture meets the stronger doxastic requirement for seeing offered by Currie's account of e-information –that is, that one can track one's location with respect to the objects one sees. While we've established that doxastic e-information is too strong a requirement in general, if it is met, one can expect that the nondoxastic condition obtains, which is to say that e-information is carried. So, here we have an everyday occasion where a photograph equivalent can carry e-information though the camera and the photographs are produced were not intended for this purpose.

The second case, which I call the helmetcam, is more elaborate and involves another kind of camera device that is mounted onto a helmet that is meant to enclose a person's head. The helmet has an interior screen showing the recordings of the exterior mounted camera, presenting a real-time stereoscopic panorama of what is outside the camera, in a way that is indiscriminable from ordinary seeing. (See figure 2.1)



Figure 2.1: Helmetcam, I. de Asis, Feb 2013.

By being in real time, this helmetcam allows interaction with objects outside as if seen directly. The camera thus conveys e-information about one's environment –e.g., if the person wearing it stands in front of a tree and then turns 90 degrees to the right, this would change the egocentric location of the tree. The internal screen would show the tree

to be to the side of the viewer. In this example, a hypothetical but plausible photographic device carries e-information and so, at the very least, the process type can be said to on occasion successfully carry e-information if adjusted to the right specifications.

The reply Cohen and Meskin would offer to these examples is not unlike their answer to the aforementioned veridical painting problem: as paintings are not typically reliable sources of v-information, photographs are not typically reliable sources of e-information. On their view, a genuine prosthesis for seeing will belong to a process-type that reliably carries e-information and photograph-type devices still fail to do this because these cases only show that they occasionally do so. So while photographic tokens may on occasion carry e-information, they still do not belong to a device process-type that carries the appropriate information reliably.

On the surface, such a reply is sufficient, but while Cohen and Meskin are right to point to the fact that photographs are not known to reliably carry e-information, there is further significance to photographs occasionally succeeding at carrying this information. One main reason for offering these cases here is to show how photograph-type devices can carry e-information and then to ask why they don't normally do this. One needs to consider whether or not there may be other conditions that inhibit device possibilities that ought to be accounted for alongside their probabilistic performance. As we have mentioned in a previous section, §2.1.2, the disposition of a device might be systematically blocked for some reason. So, what are conditions for blocking this kind of information from photographic devices?

One consideration that has been neglected it seems to me, is that the failure or success of a photographic device at carrying e-information depends on technological factors in a non-trivial way; one factor being that the device is designed to certain specifications. The design of a camera is made to succeed in performing some practical function, which is in turn determined by what people need. The parameters of the information photographs are designed to carry is then dependent on, and operates in direct proportion to, not only what information they *can* carry but given this, what informational needs there are by potential users and which are not readily available. This means that their design specifications should be a significant consideration for an epistemological account. Because photographs are configured in this way, with respect to the above etiquette of technological design, an

account of their epistemic value ought to remember the fact that the mechanism for making photographic pictures is built to fill in an epistemic gap. (Motivations for the design of such inventions do offer some insight on their epistemic value as well.)

Two consequences of this: firstly, the value of photographs is indeed bound up in their being able to fix images, and for an analysis of their epistemic value fixing the image is an important feature to consider. Photography got the job of fixing images for later investigation because this was something we could put to better use, say, so we could review the contents of those images. And this is per their design specification, as decided because they are not as useful in other ways –e.g., the helmetcam is useful to a very select few, if any. (There are very similar devices to the helmetcam, like night vision goggles, that are useful because they provide information that is not readily available such as object-seeing in a lightless environment.) So, it is not because photographic devices are essentially spatially agnostic that they fail to furnish e-information. It is because they are not particularly useful that way –the helmetcam example shows just how useless a spatially rich photographic process can be. But, as a matter of fact, preserving e-information in photographic devices would be at *cross-purposes* with its desired function. The virtues of a photographic device rest on their provision of information about objects at a timeslice, to be observed later without the constraints of time. This means, carrying e-information would be to their detriment.

Secondly, the probabilistic evaluation of photographic information cannot really be done on objective terms. This is because the disposition of photographs cannot be determined objectively when given the fact that the design process has systematically blocked certain possibilities. Photographs are *made to perform* a certain way for the purposes of increasing the kind of visual information we can gather, and so it seems that calculating whether they can carry e-information might just be irrelevant. Photographic devices as they are designed, as a matter of fact, do not carry e-information. However, this is common to prostheses for seeing as the other devices we use to enhance our portfolio of visual information all make information available that is not available to ordinary seeing, *at the expense* of some regular features of seeing. Microscopes and telescopes offer views into miniscule and distant objects at the expense of the normal scale of vision offered by the natural eye. Photographs then, are rightly deemed valuable for their spatially agnostic window to v-information but this does not null and void their transparency.

§3 Conclusions

Cohen and Meskin initially dispute the transparency thesis on the basis that photographs do not carry e-information but it was never clear why e-information should be a necessary condition for prostheses for seeing. Had there been sufficient grounds to consider e-information a necessary condition for ordinary seeing, some grey area would remain as to whether one could import that necessity for *prosthetic* seeing and there has been enough work to show otherwise in this chapter. While I agree that e-information is a regular feature of seeing, I argue that it is a contingent condition by what I call the defect hypothesis –that is to say, that a lack of e-information can simply be a defect of prosthetic seeing but that defective seeing can still count as seeing.

Undermining the necessity of e-information renders Cohen and Meskin’s account of the epistemic value of photographs in need of repair. This is because now it is not clear what distinguishes process types like photographs from painting-types. To recapitulate Cohen and Meskin’s proposal, the epistemic value of photographs is that they are spatially agnostic sources of v-information about their objects. Additionally, Cohen and Meskin also propose that viewers have certain attitudes towards the reliability of certain devices based on the type of process. They do this in order to accommodate some odd examples of veridical paintings –i.e., realistic and fact-based paintings, – which may also provide v-information without e-information. Since photographs belong to a process type that reliably furnishes v-information about their objects, while the category of paintings fails to, this explains why viewers of photographs consider devices of this category to be reliable sources of v-information, but do not have the same attitudes about paintings.⁹⁷ However, this analysis had its problems as shown in §1.2 by the flat-world navigation equipment examples: viewer attitudes could in fact be false.

Goal 1: Transparency by the defect hypothesis

Recall the case of Balint syndrome offered to Cohen and Meskin and mentioned in §2.2, where patients seem to be detached from the spatial perspective of their visual experiences. While it wasn’t clear whether the defect was in the processing of visual

⁹⁷ Cohen and Meskin 2004: §IV.

information or articulation of it, Cohen and Meskin offered that if there were instead a Schmalint syndrome, where the defect was clearly a matter of lacking e-information, they would hold Schmalint patients do not see. But it seems difficult to accept that a defect in visual information, where still so much visual information is preserved, in particular, v-information, amounts to not seeing. This is part of what motivates the defect hypothesis: if enough information is preserved, and that information is of a salient visual variety, then it should be sufficient for seeing even if that seeing is considered defective as a consequence.

I've explored how generally perceptual aids give up some of the typical features of seeing in order to provide others –e.g., give up macroscopic views for microscopic ones and vice versa, and so forth. We have scopes and probes and lenses of all varieties, which are all meant to provide, and often enhance, the repertoire of visual information but all *at the expense* of the normal range of our eyes. These are non-controversial genuine prostheses for seeing and so, there is good reason to claim that lacking information that is normally available to seeing, is part of the story for all prostheses for seeing.

Thus, part of the nature of photographic information significantly consists in photographs' enhancing the normal repertoire of sight in virtue of giving up e-information in order to gain prolonged access to v-information. And there should be no incompatibility with claiming on the one hand, that they are lacking some information typically available in seeing and on the other, that they are genuine prostheses for seeing. Having looked at cases where photographs could carry e-information it became clear that their epistemic value as a device-type was diminished by *not* fixing objects –which is to say, they lose epistemic virtues that way. However novel and entertaining (qualities that are not at stake here), the helmet-cam would be a rather useless device. I then show how it is not uncommon to gain richness in some kind of information at the expense of another kind – e.g., microscopes are at a loss for macroscopic information and we maintain that they are transparent despite a lack of information typically available to seeing.

The defect hypothesis even points us towards the epistemic salience of the device by highlighting the kind of information that, by virtue of that defect, constitutes the device's salience. Since e-information is not a necessary condition for seeing, we do maintain perceptual contact with the objects of photographs despite their being fixed and it is by fixing objects that we get the richness of that object information that we do. This is why

we find it more valuable to have photographs than helmet cams. But if Cohen and Meskin were wrong about the role of e-information in their theory, what grounds do they have for the epistemic value of photographs they proposed?

Goal 2: What is the epistemic value of photographs?

I argued that Cohen and Meskin were wrong in asserting 1) that e-information is a necessary condition for seeing through prostheses (even in the nondoxastic construal) and tacitly supposing 2) that rejecting the transparency is necessary to establishing the epistemic value of photographs.⁹⁸ With regards to 1), it was easy to come up with cases of photographic devices carrying e-information and of ordinary seeing not carrying e-information or, with even greater ease, cases of hearing without the carriage of e-information, as well as a number of other difficulties. So while I agree that e-information is a regular feature of seeing, I've argued that it is not a necessary condition for seeing with prosthetics. However, another consequence of undermining the necessity of e-information is that this allows a revival of the transparency option. If the transparency of photographs is no longer discredited on the basis of being spatially agnostic, –i.e., that spatial agnosticism is compatible with being a genuine prosthesis for seeing, – then the process type of photographs can be reliable because it is transparent.

From this analysis there is now room to agree with Cohen and Meskin that the epistemic value of photography rests in photographs being spatially agnostic informants about objects and accept that the lack of e-information is what makes photographs special. The very fixing of visual information afforded by photographic technology is part of what demarcates its epistemic value and we have some enhancement of visual-information made available by the fact that photographs fix their objects. Photographs are then belief independent, counterfactual-supporting and similarity- preserving sources of v-information. This in turn successfully handles the problems in Cohen and Meskin's account. The amendment attests to the reliability of photographs on the one hand, in virtue of the photographic process-type being transparent, and successfully makes the distinction between photographs and paintings on the other, –the distinction between photographs

⁹⁸ Cohen and Meskin 2004.

and paintings being that the process-type of photographic devices is transparent but the process-type of paintings is not.

We can also agree that the attitudes people bear with respect to photographs and to paintings are quite different but there is a more substantial basis for this difference. Transparency is one such basis for trusting knowledge had by photographs over by paintings. Of course, photographs and paintings are both sources of evidence and both have epistemic value. Both kinds of pictures are, for example, used in trials, –e.g., drawings and paintings can be used in cases to generate rough accounts of what an attacker may have looked like, to illustrate possible relations between parties involved in the scene of the crime, to assess the most likely scenario, and so forth. So they are both informative pictures. While they are alike in this way, they still differ in epistemic value, which can be illustrated by the fact that they have different results under the hallucination test I proposed in Chapter 1: Photographs are not vulnerable to representing hallucinations, while paintings are.

These results have further implications for their differences in kind. In virtue of this, photographs and paintings are subject to different sceptical hypotheses. My hypothesis is that paintings are beholden to the same kind of scepticism as knowledge from testimony and photographs subject to scepticism from perceptual experience. In Chapter 5, I will show how photographs are not vulnerable to the same sceptical hypotheses as paintings, in order to solidify their epistemic differences, and to reinforce the claim that knowledge obtained from photographs is a perceptual kind.

III



THE TECHNOLOGICAL DIMENSION OF PHOTOGRAPHS

Billboards, family albums, travel brochures, and shopping catalogues are but a few examples of where we get information from photographs in our daily lives. But photographs are also entrusted to provide information in more demanding provinces of evidence, e.g. as evidence in trials, in identification documents, or for a variety of purposes in the sciences. (These are at least more important than whether a Big Mac really looks as tasty as it does on the billboard –which, incidentally, it does not.)

In the Introduction, I have described the process of developing devices that are meant to facilitate preservation and detection of information: they have a special procedure that sets the limits of their informational capacities to the benefit of their virtues. There are a variety of stages along the way to ensure that these devices must adhere to stricter conventions than (at least) the everyday snapshot. Cameras and photographs are amongst the devices that are of special importance to the sciences, thus among other things, they are subject to the design protocol to ensure that they are rather robust. (This is not to say that photographs and cameras always meet those expectations.) Whether they produce satellite pictures of the earth, videography of internal organs by scopes, or deep-sea footage, regulations are in place to preserve a good code of conduct, but also, design protocols govern the very information scientific cameras will produce. Consequently, there are pre-sets in place on the repertoire of these instruments –i.e., the type of information they furnish and the range of distortion under which they can accomplish that are limited by virtue of their design. This pre-specified range enhances a device's virtues because too much information would be like clutter to detection and because some information is at cross-purposes.

Because the range of information afforded by cameras is pre-specified, it is no accident that the images borne from cameras are also limited in the information they furnish. The photographic picture is itself limited to a range of information by virtue of the camera's design. In the last chapter, we assessed the lack of egocentric spatial information as one of

the photograph's limitations. Focusing on the design process offers a response to a variety of objections to photographic transparency, like those in the last chapters that rely on counterexamples that illustrate what photographs lack, –i.e., objections that hold photographs do not preserve all the information necessarily available to ordinary seeing and are thereby opaque. If photographs are defective in this way, that is, lacking certain information that is typical of seeing, we need to look at whether other devices carry all the information typical of seeing. Microscopes, telescopes, and so on are amongst those meant to enhance the repertoire of vision, but they are all in the same sense, *defective*.

Microscopes, telescopes, and so on, all lack some information to the benefit of enhancing another sort. Furthermore, as their limited range of information is pre-set by design specifications, the technological dimension in turn becomes a crucial aspect of the unique identity of a device. Thus, the technological lineage of photographs not only provides insight on how they differ from many other kinds of pictures, including but not limited to handmade scientific pictures, but also how they resemble other scientific instruments which also offer images via lenses.

On the one hand, technological protocols can be one reason we trust some instruments over others, as that engineering process reinforces their reliability somehow. However, this procedure of contriving information by design scheme also gives a reason to draw a sceptical eye to their objectivity: if these instruments are made under engineering protocols, which amongst other things operate on a theoretical basis for design, and theories depend on belief systems, how can any technological instrument be belief-independent? Theories are certainly not the same as beliefs but beliefs factor into theory building. Moreover, the beliefs on which theory building is based are certainly not the same as personal beliefs (or proto-beliefs) attached to having perceptual experiences –e.g., when one believes one sees a snake in the grass.

Yet, theoretical systems are not intention-neutral either, and the resulting difficulty is that these engineered devices cannot be considered merely 'windows of observation.' At face value, one might suggest that neither can they be transparent, for in some sense, they could all be considered representational of beliefs. I will use this chapter to examine this possible tension – first between the notions of belief dependence in the more extreme theory of representation and in transparency; and later, by re-examination of the views, I explain how transparency still provides a relevant distinction. This undertaking will not

only attend to the technological dimension of photographs, but it will also offer up a unique epistemic identity of photographic pictures –namely, that they are *scopic* pictures.

§1. Representations

I must preface this chapter by offering an exegesis of *representation*, as where we put various pictures and instruments depends on it, and so does the final goal –coordination of transparency with the view that all scientific instrumentation is representational. This will not in the end yield a definition, as that is not particularly useful for our purposes.

Furthermore, the scope of representations is vast. We will see that somewhere along the way photographs get lost or misplaced in this expanse. Thus, I will instead offer only parameters of the concept, and the more specific criteria for pictorial representations.

As we know, Walton and Currie are at odds on where photographs belong: Walton believes photographs are transparent so that, as it were, photographs do not represent objects the way handmade pictures do, as handmade pictures can represent the picture-makers' beliefs about that object. Currie on the other hand, describes photographs as a kind of *natural representation* in contrast to, say, *intentional representations* like handmade pictures, but holds they are not transparent like microscopes, etc., by virtue of being some sort of representation.⁹⁹ I should note that Walton does not find these incompatible.¹⁰⁰ Meanwhile, I have hinted at an extreme view of representation, where it is suggested that all scientific instruments are representational because they depend on beliefs in some way, and that is inclusive of even microscopes and telescopes. Thus, this suggests the widest range of what counts as representational of beliefs. I have been referring to Bas van Fraassen's project in his stunning book, *Scientific Representations*. I engage this text because it provides various platforms I require for my analysis (note that there may be others that could suit this purpose), in particular providing the following three-fold function:

1) Van Fraassen offers a cluster of features of representation that provide the foundation for a mostly uncontroversial conceptual scheme of representation. Forerunners on the topic of representation with special attention to the pictorial varieties, particularly Nelson

⁹⁹ Walton 1984, Currie 1995.

¹⁰⁰ Walton 1997: 68.

Goodman and Dominic Lopes, are also encompassed in this account.¹⁰¹ This account does not present a *definition* but instead highlights the success (and failure) conditions for any given representation and the role resemblance plays in representing.¹⁰²

2) On van Fraassen's view all scientific tools are representational because they are not theory-neutral. This sets up that aforementioned tension with transparency: if technological devices are all representational because of the theory-dependence of engineering, then transparency seems to be irrelevant. That extends to other devices like microscopes and binoculars. However, I will take this tension as an opportunity to show that further distinctions are still required, especially between devices that represent per theoretical commitments in their design history, and those that represent personal beliefs (or proto-beliefs).

3) Analysing the notion of representation in a way that is considerate of Walton, Currie's and van Fraassen's varying commitments, allows me to show common distinctions, which I use to triangulate an appropriate space for photographs. While they may differ in their stances on where photographs belong within theories of representation, they can also be shown to agree on the fact that photographs are special. I argue that this comes down to the fact that photographs are not vulnerable to representing hallucinations.

I should mention a caveat: van Fraassen's project has a scope that spans far beyond the area that I will be attending to. His project looks at a much wider range of representational artefacts, which include both the physical and mathematical variety, and all for the purpose of rebuilding a theory of science. What he describes as 'representations' include a far broader range of objects and beyond; not only scopic devices as we have mentioned above, but also other tools like maps, schematics and diagrams; more complex machines like DNA sequencers and computational devices; an inexhaustible list of physical equipment, as well as abstract representations, and his most significant claim, that measurement itself is representational.¹⁰³¹⁰⁴ Here I will focus most attention on those representations that are pictorial or offer images.

¹⁰¹ Goodman 1976, Lopes 1996 and 2005.

¹⁰² van Fraassen 2008: Chs. 1 & 2.

¹⁰⁵ van Fraassen 2008: 15-28.

§1.1 Overview on representations

Both Nelson Goodman's *Languages of Art* and Dominic Lopes's *Understanding Pictures* are at the heart of van Fraassen's analysis of representations: this section will pay particular attention on Goodman, leaving Lopes's pictorial account for the following section.

Goodman's theory may be at times controversial, but his description of the two-fold aspect of representation is mostly uncontested. In effect, representations have a relation to what they represent in two ways: by being *of* that thing and by depicting it in such and such a way. For example, a pencil drawing of my son walking with a donkey is both a representation of him (and a donkey) and depicts him as being friends with a donkey.



Figure 3.1 Gaspar with donkey, Ines de Asis, Dec 2012.

Still, neither of the two faces had by representations determines any given representation entirely. Van Fraassen's strategy is to consider success and failure conditions of representations to form a cluster concept. Within this scheme, one principle is recurrent: that representations, whatever they are, are guided by "criteria of adequacy."¹⁰⁵ By this he means that the success of any given representation at representing some particular thing depends on whether it achieves some *special variety of likeness* to the thing represented. That is to say that not *all* likenesses are preserved, only a particular set of them, for too much likeness is actually to the detriment of a successful representation. Thus, Goodman can be

¹⁰⁴ van Fraassen 2008: Chs. 6 & 7.

¹⁰⁵ van Fraassen 2008: 1.

credited with this significant contribution: the notion of *highlighting* with respect to representations, because certain information should stand out and often at the expense of other information.

It is not uncommon to suggest that what kind of representation a thing is will be determined by what it is used to represent.¹⁰⁶ For example, compare an Ordinance Survey map with a treasure map one might get in a pirate costume kit: they may bear an apparent similarity but are made to accomplish two very different goals. The former is used to represent the terrain of a particular area for the purpose of navigation, and is in that sense a proper map. But the latter only pretends to be a map, and doesn't offer any real navigational cues. That 'X' mark that is meant to show where the treasure is, does not really locate anything and none of the other points are specified. It is but a prop for the purpose of play. Likewise, some paintings and drawings may be created to suit scientific purpose like biological illustrations in pen and watercolour, and others depict fantastical scenery. Photographs can be used in various ways too and depending on whether it is meant to be a journalistic or artistic picture, is relevant to their individual success conditions. This praxis criterion helps to illuminate the success conditions of particular kinds of representations and also, to make further distinctions between different sorts according to the kinds of practices in which they must excel.

Now, the notion of likeness or resemblance is neither a new nor an unpopular basis for theories of representation and there is significant controversy on the role of resemblance in representations.¹⁰⁷ However, the following should not be taken to mean that resemblance is the basis for a theory of representation, or at the core of representation in some significant way, or that it is somehow an essential property had by all representations, etc. I want to point out that van Fraassen only acknowledges that a resemblance criterion is necessary for determining what *kind* of representation something is, and can be a useful tool for analysis:

¹⁰⁶ Block 1983, Goodman 1976, et al, and van Fraassen 2008.

¹⁰⁷ A kind of resemblance theory is discussed in Christopher Peacocke 1987 and Robert Hopkins 1998; a revised account of the role of resemblance in representation is offered in Lopes 1996 and 2005.

[T]here is no strong argument, as far as I can see, based on any clear asymmetry to banish resemblance from our topic, nor one to make it relevant to representation in general. What does remain, as needs to be emphasized, is that certain modes or forms of representation (but not all) do trade on selective (and not arbitrary) resemblances for their effect, efficacy, and usefulness...¹⁰⁸

Whatever resemblances are preserved offers a clue into what kind of representation it is. Representations must be discriminating about what resemblances are preserved because if a representation duplicated every aspect, it would be a *replica*, not a representation. Hence, not only would the notion of resemblance be null (as identity goes far beyond mere resemblance), but also, too much information would be available, which is at cross-purposes with whatever the representation is meant to highlight.¹⁰⁹ Resemblances maintained in a representation highlight specific aspects of what it represents and does so *at the expense* of other aspects. Furthermore, those preserved resemblances are not necessarily found in shared properties but could also be by, say, an isomorphism or some other relation.

Consider, for example, the fact that resemblance to terrain can be achieved in a number of different ways –e.g., by aerial view, or three-dimensional models and paintings of the landscape are among them. However, the success conditions are further determined by whether the representation desired is a map, as opposed to a topographical model or an artistic view of the horizon. Trading on resemblance with the three-dimensional aspects of the terrain, or of the view from a particular mountaintop, are not the resemblances that will help to make a successful map of that terrain. Additionally, the third dimension must also be collapsed into two for the sake of convenience (at least). The particular resemblances maintained on a map depend on what it is meant to show, and this means a different set of success conditions from, say, a representation of the view as in a landscape painting. Map markers might indicate an isomorphic relation to the scale of the terrain like a topographical model, but must do away with certain aspects of the terrain’s visual appearance if it is to act as a guide for navigation. But even then, particular resemblances distinguish one kind of map from another.

¹⁰⁸ van Fraassen 2008: 18.

¹⁰⁹ *Ibid.*

These resemblance conditions are aspects of maps that we need not consciously attend to when we read maps (provided we already have the basic understanding required for reading maps). And the role selective resemblance plays to help achieve that particular function is part of what distinguishes maps from other kinds of representation. Likewise, a painting of the same terrain will resemble the view from a particular perspective and achieve its goal in virtue of yet another kind of resemblance.

However, in addition to a *resemblance criterion*, representations only succeed at representing when they are identifiable as representations of a particular kind, or even, identified as being a representation to begin with. Ned Block and Nelson Goodman, to name but two, provide accounts of representations operating within a system of representations in this respect.¹¹⁰ Knowing that we are looking at a map and not, say, an abstract drawing, makes all the difference in determining whether we come to read it properly, and without knowing what a map is, that piece of paper would not be a navigational guide. A representation will fail to communicate its purpose without our having some clue as to what kind of representation is at hand. This is not to say that we always know what is depicted –we might not identify the person in the portrait, but we identify that it is a portrait. Call this the *identification criterion*.

Further to this identification criterion, what any type or token of a type of representation represents is determined by its use. A representation is not defined in terms of a singular use, though there may be occasions for this, but by regular practices of using it in a particular way over time. Often representations only appear to belong to a particular kind, but really might be used for something else entirely. Even given knowledge of what maps are and that one has a map in hand, one considers the use of special case scenarios all the time: Maps that are drawn by children playing at finding buried treasure that do not have any reference to actual places (not on purpose at least) but only function as props in a game of make-believe. Certain indicators, such as a child's scrawled penmanship, might offer up clues for determining whether the object belongs to a map type of representation or another. This is a *praxis criterion*.

¹¹⁰ Block 1983, Goodman 1976.

The criteria of adequacy for any given type of representation are partially determined by resemblances. Most significantly, much of the definition of, and distinction between, representation types has to do with how a particular kind of representation distorts what it represents in order to achieve the right kind of resemblance. Distortions of certain features of what is being represented is necessary because without these distortions, the important features cannot be enhanced, and this ultimately is the goal. Additionally, different representation kinds will have different kinds of distortions. So while resemblance may not offer up a theory, it does point to the criteria for the success of a representational type.

§1.2 Pictorial representations

Much of the following analysis of pictures is owed to Dominic Lopes's picture theory, as offered in *Understanding Pictures*, which provides a basis for van Fraassen's account of pictorial representations.¹¹¹ A special kind of resemblance plays a role in *pictorial representations* as well, and because of this we can expect a special procedure for distorting what is to be represented in a picture. Take for example, that drawings of tables are two-dimensional flat paper surfaces marked with diagonally angled lines. This distorts the real table it represents, which is in fact a three-dimensional object with strictly vertical and horizontal planes (required for it to function properly). But what makes any representation pictorial is a distinctive set of properties.¹¹²

One distinctive feature of pictorial representations is that the kind of resemblance they bear to whatever it is they represent is limited to a visual variety. A picture of a tree resembles a real tree by presenting features of the real tree that are observed by seeing the tree and represented in a way that can be determined visually. This differs, for example, from a verbal description of that tree which is another kind of representation, descriptions also being a form of representation in their own right. Pictorial representations are beholden to a special way of distorting the objects or events they represent and this way is distinct from the distortions of verbal and mathematical representations.

¹¹¹ Lopes 1996.

¹¹² van Fraassen 2008.

Resemblances between pictures and what they represent can be found in appearance to the eye in a special way. Firstly, pictures have a privileged set of visual properties by which they successfully represent their subjects. Some of these might include line, colour, and shade, among many others. These may be used to distort certain features of what is represented but they are not used to make *a copy*. In contrast, scale models of objects (or events) may copy other aspects such as size, length, and so forth. Another significant feature of pictorial representations, as opposed to other kinds of representations, is that pictures always have a perspectival dimension. One might say verbal representations have a perspective but this is metaphorical. The features of literal perspectivity are lacking from descriptions: Perspectivity manifests in a cluster of features, none of which are individually necessary but join in some combination or another, and all of which are *distinctly visual*.

Van Fraassen, explains:

Imagery...is pictorial exactly if it bears hallmarks of perspectivity. Whether or not something is aptly called perspectival depends on whether some appropriate subset of these hallmarks are present [:]...*occlusion, marginal distortion, texture-fading (grain), angle* and with special importance, *explicit non-commitment* and the “horizon of alternatives”.¹¹³

Let us take these in order: for example, that pictures exhibit certain perspectival cues of occlusion is somewhat primary. Occlusion is the result of having one point of view onto a picture that represents, say for example, a grouping of objects: The scene will naturally contain only one angle of this grouping, and because of this some objects will only offer one face, as well as partake in blocking other objects. In order for some sides of an object to be visible entails that one cannot simultaneously see other sides –their backsides must be occluded.¹¹⁴ Perspective is strict in that one can only see part of a thing at once and things also block other things. (Let us leave aside cubist and impossible pictures for now.)

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Marginal distortion is another feature of perspectivity. This is, for example, the way a picture might look as though depicted parallel lines converge in the distance (at a

¹¹³ van Fraassen 2008: 59.

¹¹⁴ More on *occlusion* in Hyman 1993, 2000, 2009.

¹¹⁵ van Fraassen 2008: 36-39.

vanishing point). If one were to trace a grid over a picture one would find that the angles within, despite representing objects with strictly vertical lines, are distorted from this in the picture the closer they are to the margins. In the following figure there are two projections of the same building, where the first offers an example of marginal distortion and the second seems to show a correction of that distortion.¹¹⁶

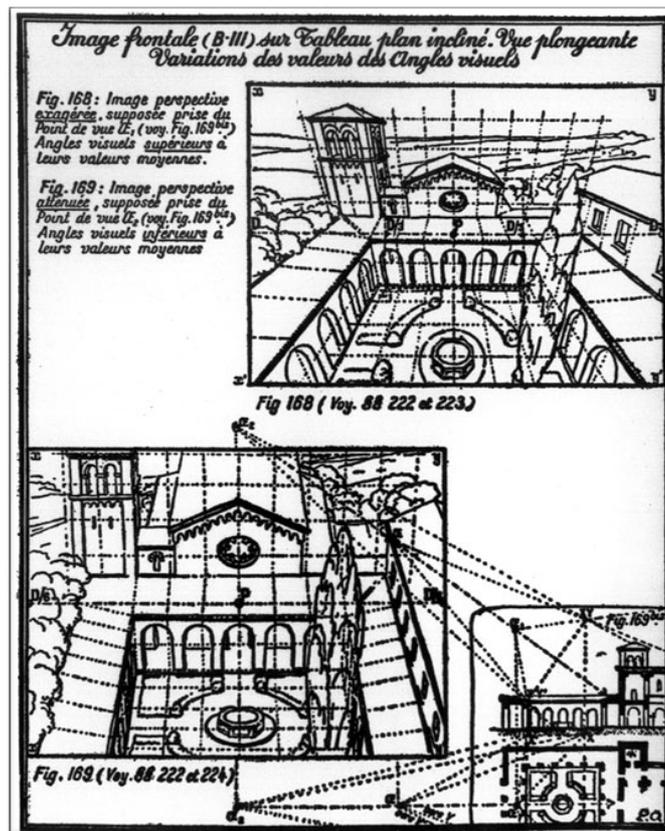


Figure 3.4: Two projections of a building, with different distortions.

It is also natural for objects in the background to appear less sharp, and perhaps even appear as vague blurs while the objects in the foreground appear more detailed. This is what is meant by texture-fading, and this is another feature of perspective that identifies pictorial representations. The figure above also depicts a building from a particular vantage point and offers specific angles of the building. We have already touched on how angle is distinctively perspectival but it is perhaps the most obvious feature of a picture when we are looking at it. When we look at pictures, we see a scene from a point of view and the number of angles and distances in representing that scene is limited. There is a

¹¹⁶ Ibid.

limit to the angles that, for example, a map can represent its terrain and in that particular case, an aerial angle is the ideal angle for the representation to do its work. There is a limit to the angles and distances by which this building can be depicted.¹¹⁷

Finally, for the purposes of providing the distinctive features of perspectivity, Lopes introduced an important feature: that of *explicit non-commitment*. For a representation to be non-committal in some respect to its subject, it must be neutral on whether its subject bears some property A, which is to say, that the representation does not commit to the subject having or not having A. Representations can be neutral on a number of properties had by its subject. In the case of *explicit non-commitment* then, the representation has depicted the subject as having a property or properties that *preclude* commitment to property A, that is to say, that those properties render it impossible to determine the presence or absence of A. For example, a portrait painting of a veiled woman might not commit to the subject having red hair or no hair at all under her veil. In this example, the veil prohibits commitment to the colour of the hair being one way or another or even its presence. Even cubist or impossible pictures can possess this feature.¹¹⁸

Explicit non-commitment has some significance in the analysis of perspectivity. As Lopes states:

Pictures, I maintain, are essentially selective, because every picture is *explicitly non-committal* in some respect. That is, every picture represents its subject as having some property that precludes it from making commitments about some other property.¹¹⁹

This is a feature that all pictures will bear in one way or another while other hallmarks may not be present. But what about in Escher-style pictures or abstract pictures that do not choose one angle to depict its subject, but many and show them simultaneously? Cubist pictures for example, as already suggested above, may seem at first to be a deviation from that rule but actually, many aspects of their subjects might be occluded, many choices about how it is represented (as having some properties) will render other properties impossible. That same portrait of a veiled woman could be done in a cubist style

¹¹⁷ van Fraassen 2008: 38.

¹¹⁸ Lopes 1996: 118.

¹¹⁹ Lopes 1996: 125.

and in its being so might show different angles of her head at once and yet, it in all angles, certain choices could be made to preclude any commitment to properties regarding her hair, or lack thereof.

But explicit non-commitment and also other perspectival features like occlusion depend on our being able to engage with pictures in such a way that we can hypothesize about a variation on what is depicted. Had there not been a veil for example, would she be bald? Had this picture been painted from a different angle would the profile be more prominent? In contrast however, there are some limitations on the kind of hypotheses one can make: for example, one cannot perhaps guess that the veil should be a fox-fur cap. These are questions regarding the alternatives that belong to limited amount of possibilities for this depiction and this is what is meant by a 'horizon of alternatives.'

§1.3 Photographs

Photographs certainly resemble what they are photographs of but perhaps in what sense isn't immediately obvious. One might be inclined to say that they resemble the view of x or one might suggest something stronger: they replicate a view of x at time slice t . In any case there are some ways in which a photograph succeeds at representing objects by virtue of certain resemblances. While this is similar to the resemblances preserved in handmade pictures, photographs maintain resemblances independent of beliefs: Photographs preserve resemblance to the sight one would have if one had been at that place and at that time. In fact, they have a particular penchant for veridical depiction. A photograph also highlights what can be described as v -information about a scene, as well as allocentric information (relative to the camera), and the state of affairs of objects within the scene. But a photograph does this at the expense of other information one would have in seeing the scene first-hand: photographs do not preserve the 3-dimensionality of their subjects, nor do they preserve information about one's egocentric spatial relations to them.

Now when we look at a photograph there is an expectation that we understand what we are looking at. We are not, for example, inclined to exorcise spirits when we can see photographs of our deceased loved ones. Part of getting information properly by photograph is in identifying what it is: that it is a picture borne from cameras, that it is an image of a thing in the past, and that they are usually pretty good at offering a depiction of

that scene from the past. Simply put, we expect certain things to be in place when we identify a picture to be photographic.

We also expect that, provided it is a real photograph, what we are looking at is veridical. However, depending on the function of a particular photograph, the facts may be represented in a variety of ways. We can often gauge whether a photograph is meant to offer facts about the world or simply meant to engage celebrity gossip (usually by looking at the publications in which they are printed). One can also distinguish between journalistic, artistic, and fashion photography, which all have different goals; and in virtue of those goals, the people represented might look especially distressed, surreal or beautiful. Now, the practice of taking photographs to capture real moments is a norm, but it is easily deviated from. One can expect abuses of the value of photographs to mislead its viewers. One example of this is illustrated by the notorious paparazzi style of photography, in which the goal is not to provide the truth *per se*, but instead to suggest a juicy nugget of gossip.

So, insofar as photographs meet the criteria of adequacy, they are representational in van Fraassen's account. Now that tension I mentioned from the outset should be apparent: Like Walton, I believe photographs are transparent and furthermore, (unlike Walton) I believe that to be the basis for their epistemic value. Since transparent devices are supposed to give visual experiences of objects without representing beliefs, but as neutral windows of observation, then we have a problem. However, keep in mind that by van Fraassen's account microscopes and telescopes are also representational of beliefs and thus, there is room to suggest that photographs are still more like microscopes than paintings. (More on this later.)

Photographs belong in the more specific category of pictorial representations. Photographs are pictorial at least insofar as they are composed of line, shade colour and other visual properties unique to pictures, and most significantly, photographs also bear the hallmarks of perspectivity. They can exhibit this by virtue of occlusion –i.e., the visible surfaces of the objects of a photograph usually appear at the expense of the other sides of those objects. Those objects are also subject to constraints in angle and distance as the point of view framed by the photograph can only be depicted from a certain amount of camera

angles. Focusing on some objects may render other parts of the picture blurry, fade other objects into the background and the list goes on.

But most significantly, photographs bear the especially pictorial feature of *explicit non-commitment* in that, for example, a photograph of a veiled woman just as readily precludes commitment to the quality of her hair just as the painting example above. Now, there might appear to be a small difficulty with explicit non-commitment when it comes to photographs in that there is indeed some fact of the matter as to the contents of the veil. After all, when it comes to photographic depictions, a photograph of the above subject entails her existence. The subject might in fact have brown hair hidden under her veil at the time the photograph was taken, but nonetheless, that fact does not partake in the depiction. Regardless, one can still maintain that photographs are pictorial, as pictures are defined according to a cluster concept, and there is no shortfall on the ways a photograph can bear some combination of the hallmarks of perspectivity. However, that is not to say that photographs are in all ways like other pictures either. (More on this later.)

§2 The tension

One goal of this chapter is to distinguish photographs from paintings but particularly, make this distinction in a specific area: between photographs and handmade pictures used for scientific purposes. I will show that van Fraassen's account lumps all pictures into one category, which in turn fails to offer important distinctions between them. One analysis that can be made with respect to that goal is by epistemic import; whether photographs are used for information in a different way than (scientific) drawings and paintings. If so, is the use of photographs more like the function of microscopes and telescopes or more like the function of maps and schematics? Later in this section I will offer various comparisons to show that the distinctions transparency can offer remain useful even if one accepts van Fraassen's theory. But before I do that and also, in order to resolve the apparent tension between van Fraassen's scheme and my thesis, it will help to describe the categorization of representations van Fraassen offers.

§2.1 Public hallucinations

As I mentioned earlier, van Fraassen describes scientific instruments as representational by virtue of their being engineered, because engineering involves theoretical commitments.

Microscopes, mirrors and such are artificial imitations of natural phenomena like curved ice formations or still water which provide magnification or reflection. Engineering takes these natural phenomena as an inspiration for designing devices, and uses theories of lenses or electromagnetism to produce more dependable instruments. However, a more startling feature of his view is that these instruments (and their natural counterparts) are described as producing a sort of publically accessible *hallucinatory* phenomena.

Now, this is not to be confused with the standard definition of hallucination, which is a nonveridical visual experience that often comes from psychedelic drugs, psychosis or high fevers –van Fraassen specifies those kinds of experiences to be *private images*, as opposed to those everyone else can see. Instead, he suggests that looking through devices like microscopes and mirrors, or their natural counterparts, has a certain kind of hallucinatory effect that we would all be able to observe. To illustrate, the images from microscopes are a magnification of microorganisms we normally could not see, but the microscope offers an image of objects as bigger than they actually are. Thus, these devices and natural phenomena change the way things actually look, just as a curved ice sheet may magnify the objects frozen within.¹²⁰ We might think these phenomena to be more like illusory images, but set that aside.

So, microscopes and mirrors are among those that are described as *public hallucinations*: they are visual phenomena of things that everyone can see, but what one actually sees is not any *thing*. Other members this category include rainbows and reflections in water: There is actually something to see when one sees rainbows and reflections in water but what one sees is not a thing itself. Some of these public hallucinations are caused by the things that they bear a resemblance to, or copy: For example, the appearance of a tree in a reflection is not itself a tree but is caused, in part, by a tree and copies the appearance of that tree. Other public hallucinations do not *copy* other things, –e.g., rainbows are not copies of anything. Despite the great variety of images that fit into this category, they all share in common that they can be photographed and that has a special significance.

¹²⁰ van Fraassen 2008: 93.

<i>Graven Images</i>	<i>Public Hallucinations</i>	<i>Private Images</i>
	“COPY”-QUALIFIED	NOT “COPY”-QUALIFIED
	-----	-----
painting photo sculpture	reflection shadow	rainbow mirage fata morgana

	<microscope image>	after-image dream hallucination

Figure 3.5: Diagram of van Fraassen’s “Image Categories.”

All pictorial representations, inclusive of drawings, paintings, maps and so on, are categorized as *graven images*. Graven images are visual experiences that come from secondary objects that are themselves objects to see, that is, they are images of things but are also things themselves. Graven images vary significantly, inclusive of pictures like oil paintings, drawings, and schematics, but also include of a variety of 3-dimensional depictions –e.g., marble sculptures of the human form, or scaled models of buildings. Since they are a kind of picture, photographs are listed as graven images. Initially this may seem plausible, but since the photograph is the image borne from a camera, and the camera itself a lens-based device like a microscope, why is it not a public hallucination? I concede that they are images but secondary objects, that is, an image but also a piece of paper, like other graven images. However, as far as I can tell, other graven images bear no such relation to a device that offers public hallucinations and that difference seems more significant than the similarity of secondarity. (More on this later.)

The last category has already been mentioned above, and these are what van Fraassen calls *private images*. Those *private images* are what we normally think of when we think of hallucinations. These are usually privately experienced visual phenomena including psychedelic events, dreams, and so on. Van Fraassen calls them private hallucinations because one could not share them with others, point them out in the distance, nor take

photographs of them.¹²¹ Again, it is significant that photographs are part of the test van Fraassen uses because, as we will later see, these private hallucinations can be represented by other kinds of pictures, but not photographs.

Again, his analysis is meant as a basis to challenge the belief that when we use microscopes and similar devices, we are looking through ‘a window’ of some sort in order to pursue scientific data. Because devices, particularly scientific ones, are designed under such a protocol and their information is determined by those conventions, one has to wonder whether the theories that help to determine their construction can produce a belief-neutral observational tool. Intuitively, we are content with the traditional description of the phenomena but he does not think we should accept this *prima facie*. As van Fraassen points out,

[M]easurements occur only as special elements of the experimental procedure by which objects are deliberately placed in unusual, artificially designed conditions – conditions in which they are made to respond to the questions put to them.¹²²

Theoretical frameworks then partially constitute the information we get from these so-called ‘neutral instruments,’ van Fraassen suggests. While theorising is part of how we understand the world of experience, there is an expectation that the instruments we use to understand the world are theory neutral. But if they are not, then perhaps our notion of objective tools needs revision. Therein lies the tension with the transparency of any instrument, not just photographs, as transparency appears to be exemplary of a ‘window of observation’ theory.

§2.2 A counterintuitive implication of this view

One feature I want to take away from this is van Fraassen’s description of technological devices being information-specified –that is to say, part of their design process does involve deciding on what specific information should be made available, and often at the expense of other information. Thus the range of distortion of artificial images is subject to

¹²¹ van Fraassen 2008: 104-105.

¹²² van Fraassen 2008: 93-94.

those pre-sets mentioned earlier –per their technological history. This is valuable to maintain but there are other aspects that need to be sorted first.

One interesting consequence of van Fraassen’s view is that the devices with the strictest process of design contrive the information most, bearing the strongest representational features in virtue of being the outcrop of theoretical commitments. This generates a paradox of sorts: on one hand, scientific instrumentation is held to the highest standard for producing a sort of “window” to the world *because* of their systematic production, –that systemization being an effort to preserve objectivity no less– and on the other hand, this very stricture is what forces the information through a system that undermines the objectivity of the data.

Accepting this account has further counterintuitive implications. The more natural occurrences of such phenomena are less belief-relative because they are theory neutral, while the artificial reproductions of those processes are not. Fossils and naturally occurring photograms do not represent theoretical systems (on purpose); rather, they rank more closely to windows of observation than photographs and microscopes. That ranking is perhaps in itself acceptable. Because no instrument of science, per van Fraassen’s diagnosis, is belief independent, it seems that devices commonly accepted as enhancements for seeing cannot be transparent either (since, belief independence is one of the necessary criteria for transparency). That will require attention.

However, in practice we find manufactured lenses more reliable than naturally occurring lens-type phenomena (taking for granted the lenses in our eyes), and we expect continuity in the reflections in our mirrors over reflective surfaces in nature. Not that everyday practice always aligns with the truth of things but in this case, it seems, we find the artificial devices more reliable because they offer a level of uniformity and consistency that their natural counterparts cannot. Quite often, that is the very reason they were designed in the first place—to replace the rather flakey natural phenomena we once relied upon. Thus, technological artifacts have more *epistemic* credibility over the naturally occurring phenomena on which they might be based. That is to say, we take these artificial devices to be dependable sources of the information they are made to furnish. While we might even on occasion use the natural inspiration for them, –e.g., look into a puddle to check one’s teeth in lieu of a compact, – the mirror is tried and true for that purpose.

When we look at a mirror, we expect an objectively formed reflection of ourselves (notwithstanding self image issues that may skew how we see the reflection) or, in other words, we do not expect to see ourselves through someone else's eyes. But somehow, by van Fraassen's account we supposedly have it backwards: seeing through a mirror means we see through a device that has been modified according to what we are supposed to see, and that is according to the theoretical commitments of those who produced the mirror. So, mirrors cannot be belief independent. But then why *do* we rely on mirrors over puddles even though we might not know that?

Photographs can also be analyzed accordingly: Being the product of the camera, which is itself an instrument of documenting information that undergoes strict technological protocol, means the photograph gives only a view based on a theoretical basis of engineering. Consequently, photographs represent their depicta according to the design specifications. However, naturally occurring phenomena of the same ilk, such as the naturally occurring photograms mentioned in previous chapters, offer something closer to a neutral window of observation than photographs because they are not made with cameras. Even if both are considered representations on van Fraassen's view, it is nonetheless odd that a theory-relative device bears more contrived information than naturally occurring phenomena. Consequently, on van Fraassen's view, we should resist accepting the neutrality of technological devices, though it may apply to their naturally occurring counterparts.

We appear to have a rather counterintuitive *epistemic* implication (which, is not encompassed in van Fraassen's theory). We normally trust the instrumentation that has undergone the more regulated protocol (and because of that very systemization) over the naturally occurring phenomena, because we cannot predict whether the latter types will always align with nature to produce the image we are looking for. We can expect some regularity and reliability of information and uniformity across instruments of the same kind. (Of course, defective instruments may occur, but in general, a microscope will do what we think it does.) We find this design history to be confirmation of the product's being able to produce the information we use it to search out. So when we transfer the matter into principles of trust, we have the opposite of the results we would expect.

§2.3 Comparing devices

We want to maintain that instruments like microscopes and telescopes are transparent or ‘windows of observation’, but since the technological protocol they undergo does in some sense impose a theory, we have to decide at what point theory-relativity is to be distinguished from belief dependence. One reason for that distinction is that our epistemic attitudes differ between these and we trust the images from a systematically produced device over handmade representations of the same images –e.g., microscopic images over hand drawn paramecium, sonogram images of internal organs over charcoal renderings, and so on. Here I provide comparisons to illustrate where a distinction is needed between kinds of pictures and devices that *ex hypothesi* are all representational of beliefs.

These comparisons include:

- 1) a hand drawn map versus a standardized map
- 2) a hand made drawing of x versus a microscopic slide of x.
- 3) a photograph of x versus a painting of x

I offer the first comparison to illustrate differences in epistemic attitudes towards the same thing, namely a map, but whose histories of production differ. Do we give more credence to a handmade map drawn by someone on the street or to one that has been standardized? Even though both maps have the function of pictorially representing orientation in the same way, there is a level of added credibility given to the map that has undergone some testing and checking beyond the scribbles of the individual mapmaker on the street. Sometimes the scribbler even has more knowledge of details and landmarks to guide you but in general we hold the standard map to have been through some regulatory practices. We might use both maps too.

Maps are special epistemic objects because they are like drawings and have a history of being handmade (as cartography is and was a craft) but they are nonetheless subject to some conventions that regulate their information. One can imagine a number of cases where a map can even be belief independent in the way photographs are, especially if they have been made in a process like for example, the following – a map could be made by taking a satellite photograph, where the image is then transposed into a simplified version with bare lines and contours, all by computer. The hand-drawn map from the acquaintance on the street is belief dependent in an obvious way: it represents whatever

that person believes of the terrain he is illustrating for you. But the mass produced map is subject to some regulations and are made with a number of checks along the way even if it had been handmade at some point. These latter sort, have a certain credibility in virtue of having been through a tribunal of some sort to verify the data.

But while the machine made maps are subject to conventions that hope to limit any imprint of personal belief, they wouldn't be transparent because they do not meet the similarity preservation criterion. In fact, a previous section showed that a certain kind of distortion had to occur to make these kinds of representations function properly: this involved a change in perspective and flattening of space and so on. Distortion of the appearance of the terrain to favour isomorphism with the spatial aspects of the land or of the appearance of the components in order to highlight the parts that need attention, means these kinds of representations deviate from looking like what one would see if one saw what they represented first-hand. Even the satellite photograph would undergo a significant change in order to transform into a readable map. However, one can imagine that putting the satellite photograph through a different algorithm might yield an impartial map.

Bringing back the topic of handmade pictures, I would like to compare a different device. As we know, microscopes are in Walton's view transparent but in van Fraassen's view representational. Because of the counterintuitive implications for the epistemology of scientific instruments, we need to look at whether we give the same credence to what a microscope shows us as to a hand made drawing of that same image. If someone were to draw the very same paramecia in the very same way, would we treat it the same as what the microscope shows us? We would likely give the microscopic image a certain epistemic value that is different from the drawing, even if the drawing shows more about the paramecia's various parts and so on. This is because while the drawing might preserve some similarity (in fact, it may even be better at highlighting certain features that would be overlooked on the microscopic slide), the microscope preserves that similarity condition without dependence on what someone else has seen.

These comparisons are just introductory, but the most relevant comparison to be made here is between two kinds of graven images van Fraassen noted: photographs and handmade pictures. Both offer visual information about objects and are objects

themselves, that is, paper with images on them. While microscopic images can be seen at the time the slide is in place and one looks through it, graven images freeze the image to be looked at any time afterwards and are distinct objects themselves. But how handmade pictures and photographs do that are also very different. When we compare our epistemic attitudes about a hand drawn picture of paramecia, and the view through the microscope, we found they were different. Handmade pictures of something will also be treated differently from photographed image of that same thing.

While the division being attributed to transparency may be controversial, we do in fact trust photographs of crime scenes over paintings of them, even though we use all sorts of drawings for evidence as well. An important condition for this trust is that the device that produces them is meant to create an impartial representation. Cameras are built to take pictures of things that are really there. Photographs cannot represent things that aren't there. (At least, not without some creative tweaking, which I will discuss in the next chapter). This point may not necessarily sidestep any issues for philosophers of science because skepticism about the purity of observation had by these devices cannot be undone, but this is sufficient for an epistemic analysis. Whatever the relationship to beliefs had by the variety of instruments here, there are still differences between how we regard some representations over others.

We know that photographic pictures are not the only kind used as scientific tools. However, there are differences in the ranges of distortion determined by their methods of generation. This tells us something about their differences in kind. The direct correlation between their respective ranges of distortion and the resulting pictures are not all limited by the tools themselves. Some pictures are made by hand with pencils and paper to document, say, the parts of a flower. That hand can do a whole range of other kinds of drawings with that pencil and paper: e.g., they can draw Tolkien characters, portraits or even abstract pictures.

While both kinds of tools are limited –and limiting in what one can achieve with them– the limits of cameras *define* the limits of the photographs they can make. So, how picture makers of both photographic and handmade pictures distort reality is subject to different kinds of limitations for distortion. Different handmade pictures have techniques for depiction: maps scale terrain; schematics highlight crucial parts, etc. They all succeed and

fail according to what kind of representation it is supposed to be. As discussed in a previous section, those depictive techniques have certain goal-oriented distortions. Photographs, meanwhile, have a different interaction with the medium: there are a variety of photographic techniques one can use to achieve what one wants but knowledge of how to operate the camera and use a variety of peripheral equipment is crucial. The distortion scope of a photograph can only be stretched by experimenting with peripheral equipment.

We also discussed the aspects of technological invention in a previous section.

Technological devices are subject to a committee of designers (formally or not), and this committee decides how the devices will function properly. For the camera, the resulting picture and the kind of information it can provide depends on this. In other words, technology, both then and now, is regulated in a way that one cannot regulate techniques of artists. (Photographic artists are distinctive in that they work within the limitations of their medium –that is their special brand of creativity.) Paintings and handmade pictures of all kinds are created according to techniques, not technology, and techniques are had by artists, not devices. They are crafted and while sometimes objects of design, made to a specification (as a handcrafted chair is designed to function as something to sit upon as well as a decorative object) they do not undergo the process of technological devices.

Current day digital cameras can provide a library of styles and effects that were once specific to individual analogue cameras. They can achieve more than the entire repertoire of effects that an arsenal of novelty cameras could. However, the photographs that come from even today's digital camera are still limited in that they cannot surpass the limits of the camera. Unless, of course, one manipulates the digital image in a photograph-editing program, in which case, we have a handmade digital picture rather than a photograph. (We will look at that distinction in the next chapter.)

Paintings and drawings and other handmade pictures are workable media. They are not limited by their generative methods as those methods are generated according to techniques, not subject to the same limits as a technological device is. The technique of painting, versus that of drawing, has limitations of its own kind but this is not determined by the limitations of a device that produces them. One should not confuse this distinction with the limitations of different media: it is true, for example, that one can accomplish some layering with oil painting that one cannot with watercolors and so on. Rather, one

can distort reality in ways with handmade pictures that one cannot do with (unmanipulated) photographs. Drawing or painting impossible pictures, Escher-style images, and cubist depictions are within the range of their techniques. Drawing or painting from fantasy, dreams and so on, are within the range of possible depictions in these media.

Handmade pictures are crafted by people, and that is to say that the picture-maker is a person. It is true that both photographic and handmade pictures are produced by a picture-maker in conjunction with his or her tools, whether that is a camera or a pencil. However, this is compatible with the former tool being a complex machine that has a delimited set of possibilities. The distinction between these picture types goes back to Roger Scruton again: handmade pictures are intentional representations whereas photographs are not. That is to say, that crafted pictures that are meant to represent visual events necessarily depend on the intentional states of the picture makers. This means the contents of handmade pictures can represent non-veridical visual experiences like mirages, dreams or hallucinations. We already know this because handmade pictures proved vulnerable to representing hallucinations, per the hallucination test in Chapter 1.

But one cannot represent one's hallucinations with a photograph (unless one manipulates it somehow). Scruton describes photographs as having a causal relation to their objects.¹²⁵ The photographic image of *x* entails that *x* existed to be photographed. It is in this way that photographs depend on their objects in a way that paintings and drawings do not. And it is also because of their limited range of distortion that they are different from handmade pictures, as with the handmade pictures the opportunities for distortion are far more extensive.

Now there is something more significant about photographic pictures that differentiate them from handmade pictures. Recall for the moment the test van Fraassen offered in order to show what counts as a public hallucination. In this test, if one can photograph a hallucination it is a public one rather than a private one, which can only be seen by the person hallucinating. The photographable hallucinations can be seen by anyone who is there to see it –rainbows and microscopes belong to this group. Could one carry out this

¹²⁵ Scruton 1981: 579.

test with hand drawn pictures? Would we call a drawing of a rainbow a necessary indication of that rainbow having existed? Perhaps in general we trust that no hallucination has occurred there but the fact remains that a drawing is vulnerable to that possibility and a photograph is not. One can privately hallucinate a rainbow that isn't there and draw it accordingly. One could not however photograph the hallucination of a rainbow. In a nutshell, some devices can be used to represent hallucinations and some cannot.

Now, one can only use van Fraassen's camera test for public hallucinations if one gives the apparatus credibility to produce an honest picture and that credibility is withheld from paintings. So there is some implication that photographs are particularly trustworthy form of picture making, or they would not be able to act as confirmation of the public phenomena. Why not paintings though? It seems obvious to me, as a devotee of transparency that this can be explained by the fact that a painting's content counterfactually depends on the painter's beliefs and his beliefs could be wrong. Belief dependence is supposed to be across the board but it is clear that photographs do not have the kind of belief dependence that paintings do. Photographs are not belief dependent in the sense that they would be able to represent the content of hallucinations, whereas paintings are belief dependent in that way. So, while devices used for scientific inquiry are representational on van Fraassen's view, which makes them suspicious because they bear the stains of beliefs through theories, we can already see that the kind of belief dependence relation had by scientific instruments is probably not the same as that of handmade drawings.

§2.4 Belief dependence: differentiated and revised

I have argued thus far that engineered instruments are representational alongside handmade pictures, as both depend on beliefs in some way. Those more commonly trusted scientific devices like telescopes and microscopes, which we trust partially because of their engineered production, are representational because of the very belief systems that guide their design. But there remains the fact that in practice we typically trust the images from instruments of science, and photographs too, over handmade pictures. So here we must find a way to differentiate the kinds of belief dependence attached to them. But first, I want to explain that the notion of belief dependence is slightly misleading because beliefs

are a kind of intentional state, among which there are many others, including perceptions and recollections. It will be helpful to understand belief dependence as a kind of exemplary of the more accurate description *intentional dependence*.

Now, let us look at how a microscopic image is representational on this view. A microscope is designed to make very small matter visible to us. It magnifies some of the smallest particles we know of and it does so, for the most part, with the use of lenses. From early forms to mass production of a variety of microscopes, lens theories were used in order to design a variety of microscopes. For example, optic lens theories were used in the design of microscopes where refraction of light was the mechanism for their images, and similarly, while different mechanisms, electromagnetic lens theory was used for electron microscopes. Thus the use of lenses in different ways became integral to various conceptions of the microscope. Being based on theories (of lenses, electromagnetism, optics, and so on) is what makes a microscope representational, for theories depend on beliefs even if those beliefs have been substantiated and so on.

Yet, even if one only sees that image because the microscope was designed to the tune of a number of beliefs, those beliefs are not producing the image. The microscope produces the image and the device itself is only belief dependent insofar as theories were integral to its design. But the device does not represent the beliefs that helped form the theories, nor the theories themselves. The microscopic image is itself belief-neutral, however the process of designing a microscope might otherwise be. So, on the one hand, we have the kind of belief dependence that is required in the forming of theories, but theories are themselves more robust than beliefs.

So, I want to suggest that scientific instruments are dependent on belief insofar as they are *theory relative*. Theory relativity is then to be distinguished from dependence on intentional states (of which, perceptions and personal beliefs are a part) as there are also devices that can represent intentional states and in fact, require some sort of intentional state to depict. Microscopes and telescopes cannot represent intentional states. When we look through theory-relative devices, the image we see not only fails to represent intentions, but also their images do not counterfactually depend on intentional states either. This is a crucial difference from handmade pictures, as the kind of belief dependence handmade pictures have is a necessary dependence relation to intentions. Handmade pictures depend on the

intentional states of the illustrator, who in turn can represent a variety of intentional states including beliefs, dreams, memories and fantasies. (This is not to say that all mental states are intentional, but rather at most, that all mental states that may be engaged for seeing and drawing, at the very least require *proto*-beliefs.)

Now, whether or not beliefs are engaged in drawing might seem to be debateable as there is some way one might think that drawings can circumvent belief states. One example of this can be sourced to a commonly used guidebook for budding artists called *Drawing on the Right Side of the Brain*. This book offers a method of drawing that requires one to more or less behave like a tracing machine: one is to look onto the object one is drawing and not the paper, following the lines with the eye and coordinate that with the movement of the hand, in such a way that one detaches from what he or she is drawing and is merely following lines.¹²⁴ Another reason to consider the possibility that drawing can bypass belief states is offered by Lopes. He has suggested that it is possible for many kinds of drawings to be drawn without engaging a conceptual state, and that without concepts there can be no beliefs.¹²⁵

However, I do not think either of these states is adequately distanced from, or insensitive to, at least a *proto*-belief that one has seen some object. I thus want to reinforce the intentional description here, as beliefs belong to that category alongside a number of other mental states (again, not to claim that all mental states are encompassed). Belief dependence is only one of many intentional states that can be engaged in hand-making pictures. Yet some intentional state is required for drawing, for at the very least (whether one calls seeing intentional or *proto*-intentional) drawings depend on the illustrator's perception.

To illustrate, whether engaging concepts or not, even a-conceptual drawing is vulnerable to hallucinations because they still require the use of the perceptual apparatus of the illustrator. Even the state prescribed by *Drawing on the Right Side of the Brain* is vulnerable to representing hallucinations for the same reason.¹²⁶ As such, both kinds of drawing methods

¹²⁴ Edwards 1979.

¹²⁵ Lopes 1996: 184-87.

¹²⁶ Edwards 1979.

are sensitive to any combination of intentional states just by requiring perception at the very least. Whether attentive to concepts while drawing objects or not, the illustrator represents (and misrepresents) according to what he sees, which is itself sensitive to engaging other intentions. And there is always the possibility that strictest disciple of realism is hallucinating. Handmade pictures are far more intimate with intentions that include *personal beliefs* than microscopes and so on, and they thus bear a necessary dependence on states that allow those beliefs to be represented in the depiction.

As we have touched upon at various points thus far, the particular kind of belief dependence or intentional dependence had by handmade pictures can be identified by their vulnerability to the hallucination test I mentioned in Chapter 1. This test checked whether information provided by any given picture-making technique or device was vulnerable to someone else's private hallucinations. It seems appropriate that a test that will show the vulnerability to private hallucination problem will help offer the distinction between counterfactual dependence on private beliefs over those that may depend on belief systems. The test again is as follows:

Private hallucination test:

If a device or tool (used in science or other environments for the purposes of offering information) generates a kind of representation that is vulnerable to the possibility of regularly representing private hallucinations, it is not transparent.

This means that if a representation can represent false perceptions such as hallucinations from psychoactive drugs or psychological conditions, it is vulnerable. It also means that devices that require states that are vulnerable to hallucination, even if that is not engaged, still belong to the category that is vulnerable to this test.

Per van Fraassen's account, photographs are graven images, –that is, secondary objects that bear an image of what they represent– and as such they will go with other pictures. But it doesn't seem quite right that photographs are lumped in with handmade drawings. There is still some fundamental difference between the relationship to belief had by scientific instruments and photographs on the one hand, and that had by handmade drawings on the other. Whether one admits to this difference per the transparency thesis,

or per Currie's natural versus intentional distinction, or even per Scruton's causal versus intentional distinction, one still wants to draw a line between photographs and paintings.

One significant difference in belief dependence between photographic and handmade pictures can be sourced to how their respective images are produced. The handmade picture is obviously made by someone, but even though someone takes a photograph, the image is still owed to the camera. We have already shown how handmade drawings by virtue of requiring the involvement of an illustrator, are sensitive to representing hallucinations. But on the other hand, photographs are not sensitive in this way. Photographic images cannot represent hallucinatory content because they are borne from cameras, and cameras have certain limitations. While people often operate cameras, cameras can only photograph what there is to photograph. What the photographer believes will not have direct impact on the image. So, we bear different attitudes towards the information these respective device types provide because of the process by which they are made, and a difference in belief dependence as illustrated by the hallucination test.

Microscopes, telescopes, binoculars, etcetera are invulnerable to the hallucination test and thus, for Currie and Walton these devices are transparent. While van Fraassen wants to convince us that treating microscopes and the rest like windows of observation is wrong, and I am sympathetic to his view, it remains to be seen whether Fraassen's account can make transparency redundant. Meanwhile the transparency of photographs is still to be determined. The above analysis, I believe, was able to show that the distinctions of belief dependence, reinforced by the hallucination test, not only separates microscopes and telescopes from handmade pictures, but also separates photographs from handmade pictures. Now some additional work needs to be done to find a suitable home for photographs.

§3 Coordination

The private hallucination test demarcates a line between kinds of representation by distinguishing one kind of belief dependence from another. Being vulnerable to hallucinations is the hallmark of representations that are dependent on intentional states like personal beliefs, whereas not being vulnerable to hallucinations indicates the device is representational of belief only insofar that it is theory-relative, but it will not itself produce

an image according to what someone else sees. Currie and Walton can probably agree to this distinction and I believe van Fraassen would take no issue either.

Now, I want to offer a coordinated view of these accounts of representation for, as I mentioned earlier, I believe there is some conceptual isomorphism between them, and also a place we can all agree to put photographs in. First, let us review the scope of their analyses of representation:

Van Fraassen considers everything we have discussed to be representational of beliefs; from microscopes and other scientific instrumentation on the one hand, to handmade pictures on the other. Let us call this broad sweeping view (R1). (R1) recognizes that there are private hallucinations, –i.e., those from dreams and psychedelic drugs and so on, – but that many scientific instruments are a kind of public hallucination, in that they can be seen by others but are somewhat illusory. A distinction was made between two kinds of hallucinations on his view, per the (private) hallucination test, which separates handmade intention-dependent representations from those devices that are theory-relative representations. One can surmise that between graven images too, one can distinguish those that are vulnerable and invulnerable to private hallucination. Van Fraassen at the very least cites the photographability of some phenomena to indicate that they are not private hallucinations.

The hallucination test also demarcates the representation types in Currie’s analysis, which we can call (R2). Intentional representations are vulnerable to representing hallucinations, whereas natural representations, like photographs, are not. Transparent devices like microscopes and telescopes are also invulnerable to the hallucination test but on this view, photographs are not transparent. Thus, this differs from (R1) in that there are transparent devices, which are thus not representations.

Walton’s view would be in agreement with Currie and van Fraassen, that handmade drawings are vulnerable to the hallucination test, and that photographs are not: we already know that photographs can only represent what there was to see, and will offer images in accordance with that, even *despite* what the photographer sees. They are, along with a host of other instruments of observation, transparent. Walton’s account differs from (R1) and (R2) because of this transparency thesis in that he does not think *any* of these devices are

representational of beliefs, even if they are representations of some kind. That is, of course, except for those vulnerable to the hallucination test. Call this (T1).

Now on both (R1) and (R2) there will be some special place for photographs for they are neither of the microscopic variety because they are secondary images, aka, pictures. Yet, despite being a kind of picture, they are not vulnerable to hallucinations like other pictures, particularly handmade ones. Currie and van Fraassen can probably both agree that photographs are natural representations for those reasons.¹²⁷

But, for (T1) photographs belong with microscopes and telescopes as photographs belong with the devices that are invulnerable to hallucination. That in-between place that (R1) and (R2) forced photographs into, is ignoring the force of the hallucination test, which puts photographs in with transparent devices. And one should also wonder whether photographs easily fit into a category with graven images: photographs are images borne from cameras, which are a kind of scopic technology (in that they are built on lens theories). As cameras are a kind of scope and photographs are the images they bear, one might argue that this is not unlike the relationship of microscopes to their microscopic images. That is to say, that the fact that photographs are secondary objects may be inconsequential as there is no stipulation against scopes producing pictures externally. It is not entirely clear, but I am happy at this point for that to remain ambiguous.

I do think that van Fraassen is right to say all of these things are representational in their own way, but what does that say about my loyalty to the transparency thesis? I say that subscribing to (R1) is not to the detriment of transparency (nor perhaps even to Currie's view). This is because I do not find transparency to be incompatible with representation, if the belief dependent element of representation is to be construed as (R1). Even if all devices are representational of beliefs, there are some that are more like windows of observation (even if they aren't quite) and some that are more like looking through someone else's windows so to speak. The hallucination test distinguishes them. Thus all these instruments being representational is compatible with holding that photographs are transparent.

¹²⁷ Coordination based on Currie 1995, Walton 1984, van Fraassen 2008.

Now cameras belong to the former, and by extension, as the image the camera produces I think the photograph offers a window too. However, in seeing through a photograph as it were a window, what a photograph represents is a particular and specific view at some time in the past. Thus, what we see through photographs is a visual representation of a time slice. That is not incompatible with saying that we literally see through photographs either. Whatever object we see at present has of course taken time to bounce light rays to travel from object to eye, and then from the eye through the mind to recognition. That object we see is in the past but the event of seeing the image is present. Thus even what you see now, –and I mean literally, these words in the thesis in front of you, – is also a representation of a past timeslice.

§4 Scopes, pictures and the technological dimension of photographs

One of the goals of this chapter was to distinguish photographs from paintings in a specific commensurable area: both photographs and paintings are types of pictures that can be used for scientific purposes. But in analyzing that we found the success and failure conditions by which the respective picture types are held, are very different indeed. Van Fraassen's account did not offer another important distinction between them, which considers what kind of information these respective device types are meant to offer. Photographs are used for information in a different way than (scientific) drawings and paintings and their use is more closely aligned with the function of microscopes and telescopes than the function of maps and schematics.

But this technological dimension also offers something extra to the epistemology of photography: without the rigid design process, and without what van Fraassen considers to be an artificial and forced perspective on objects, there would be no relevant difference between natural phenomena and artificial imitations of those phenomena. Reflections in the water and mirrors do share a basic phenomenal quality in common but are different in that the latter can be expected to produce a reflection under a variety of conditions that the former cannot. Sometimes, it is too dark or rippled or dirty to see reflections in water and while certain things can make a mirror lose its reflection, these are both a different set of conditions and they are continuous possible counter conditions for all mirrors.

This matters because one can expect certain results in an artificial setting or rather, a normal range of functionality that is different from the natural setting. A crucial element of photographs is that their informational scope is limited and defined by the design of the camera. Technological specifications determine what information is present and not present *systematically*. That protocol includes a step where crucial information is determined and thus, the information present (and not present) in a device has been carefully decided. As we discussed in Chapter 2, microscopes and telescopes enhance information at the expense of other kinds of information that is within the natural repertoire of vision but they do this by virtue of the technological protocol that cameras are also subject to.

Microscopes and telescopes (as well as a variety of pictures) are used to show us what something looks like. Their particular successes depend on providing a view to the very small and very far but generally, they are scopes and scopes need to bear an image of what something would look like given a different scale of vision. Yet their virtues depend on specifying one information cluster at the expense of other information normally available to seeing. And, as I have previously mentioned, that this is the very reason photographs do not carry egocentric spatial information – to preserve e-information is at cross purposes with their function of providing a timeslice of what something looked like, without the constraints of time.

Microscopes and telescopes, as discussed in previous chapters, provide us with enhancements of our ordinary vision by virtue of being transparent devices even if they are representational (per R1). They are transparent because they offer a belief-independent, counterfactual link to the objects seen through them, which is to say their image is not vulnerable to the hallucination test. Furthermore, these devices preserve similarity to what they represent, and one can also analyze the kind of similarity they bear in terms of v-information, which is information about the visual properties of objects they furnish, a representation of which can only be had visually –and that is by virtue of being pictorial. But again, to do this properly, they must be choosy about what v-information is represented.

The technological dimension of a device also adds an aspect of continuity between devices of the same kind so that we can expect that any microscope (whether ours or our

neighbours) will do the same thing. That dimension sets the normal range of information and offers a further level of reliability. The epistemic value of technological devices thus, in part, must acknowledge the fact that the information begat from a device is within a pre-specified range of information. Cameras are technological devices and they are subject to that same protocol. Hence the scope of information they carry is predetermined by their design.

Meanwhile, photographs are pictures but unlike the handmade variety, precisely because of their scopic lineage. What makes a photograph unique in this particular case is that it is both the image offered by a scopic device, but also a secondary object like a picture. Unlike the images in other scopic devices, the photographic image is external to the camera. Unlike many other pictures, its range of distortion is limited by the camera that produces it –just as in the images produced by microscopes and telescopes. A photographic image is thus beholden to the technological constraints of its lineage. But this is perhaps why, as Patrick Maynard was right to point out, photographs can facilitate the combination of depiction and detection.¹²⁸ In Laura Perini's analysis of Maynard, she proposes that this coordination of depiction and detection in photographs is more graceful than other devices and pictures, because they facilitate both without the information kinds being in conflict. That in turn highlights the epistemic value of photographs: other pictures and scopic instruments can, respectively, facilitate either depiction or detection. However, to coordinate them is usually to their detriment and requires substantial supplementation or expertise, to make their information such that one can understand it.¹²⁹

Furthermore, with its technological lineage, a photograph is going to be quite different from naturally occurring photograms and fossils, for the natural counterparts provide the information they do by an accident of nature. Recall the problem in Chapter 1 about fossils meeting the criteria for transparency: fossils, which are imprinted with visual information about their objects in a belief independent manner, do not seem to hold the same epistemic authority as a photograph. Fossils are certainly informative and provide invaluable information about the organism, but it seems odd to claim we see through fossils, even if Walton concedes this. Regardless, it seems one good reason for this difference in attitude

¹²⁸ Maynard 1997: Ch. 5.

¹²⁹ Perini 2012.

between the two is that fossils are not artefacts. They occur naturally, and however richly they detail some anatomical features of long-gone fauna and flora, the information they provide has not undergone technological regulation. While the transparency thesis Walton offers does not differentiate between these naturally occurring phenomena, artificial copies of these phenomena, nor the technological development of devices that mimic these, there are still important epistemic differences between them. Those technological artefacts that imitate natural phenomena have undergone a process to make the most efficient instrument. Their defined informational scope is part of what determines their epistemic value, since the information we get from an instrument is exactly the kind of information defined by its design.

IV



THAT DIGITAL PHOTOGRAPH PROBLEM

Recall that in Chapter 1, we mentioned Scruton's main motivation in "Photography and Representation," which was to challenge the place of photography in the category of representational art by offering an account of the way photographs are made that is significantly different from other pictures.¹³⁰ In the first phase, he offered an account of representations in general, stipulating that all of them stand in an intentional relation to their subjects. In virtue of this, representations are competent at expressing the thoughts of the image-maker. Paintings and drawings are representational because their contents depend on (and thereby express) the thoughts of their makers. But photographs do not have this capacity because they undergo a non-intentional process so that their relationship to their subject is a *causal* one. What this means is that whatever the photographer *believes* he sees will not affect the outcome of the picture, where such beliefs do present themselves in other pictorial representations. Needless to say, Scruton finds photographs to be poor at expressing the photographer's thoughts – a virtue that representational art is obliged to exploit. And consequently, according to Scruton, it would be false to call photographs representations at all. But we know better at this point.

If we ever bought Scruton's line to begin with, so it was the case before the advent of digital photographs because it is with far greater ease that photographs, of the digital variety, can be expressive by virtue of their being manipulated to accord with the thoughts of their makers. So there's an answer to Scruton. However, this shift in photographic technology not only comes with a promise of expanding artistic possibility, but also with a threat of epistemic difficulty. These days, film-photography is fast becoming a rarity and the use of digital photography has become more conventional than film for even the everyday casual user. Scruton will surely find irony in the fact that the use of film cameras is now reserved for more artistic endeavours.

¹³⁰ Scruton 1981: 579.

Thus far, we have primarily explicitly explored film photographs –that is, photographs from film cameras– but digital photographs may or may not belong in the remit of previous chapters, and we will explore some of the reasons why the technology of the digital photograph poses such problems. I want to maintain that the claims made about the epistemic value of photographs in the previous chapters obtain and that those chapters have been considerate of both kinds of photographs all along. In short, I have treated them as the same kind of device, which is arguable, and so this chapter is dedicated to the question of whether their differences make them different in kind and some other problems specific to digital photography.

For example, perhaps we should find it troubling that the widespread use of digital photography, and the ease of image manipulation that comes with this technology, means the tweaked photograph is more commonplace than in the former film variety.

Acknowledging the fact that digital pictures are easier to manipulate, and quite often, some manipulation happens without a second thought, on what basis do we continue to trust photographs? We do so, perhaps, on the basis that digital photographs are more likely to be genuine articles than not, or preserve a significant amount of the information honestly, or by some nostalgic connection to the film photographs. Nonetheless, the frequency and acceptability of tweaked digital photographs undermine the general reliability of photographs.

As a consequence of these new practices, we now give a second thought to a photograph that is digitally produced and yet, we don't want to distrust digital photographs on principle either. There are several ways to compare digital and film photographs but the bulk of the issues can be herded into three problems: The first problem comes from comparing the two technologies, in that the ease of manipulation of digitals threatens the credibility of film photography. In short, we cannot tell the genuine digital photographs from those which have been manipulated, henceforth let us call this the *genuine article problem*. W.J. Mitchell offered a solution in his book, *The Reconfigured Eye*. There he proposes to divorce digital photographs *so-called*, from the category of genuine bona fide photography. Digital photographs may perform the same function as their film counterparts, but the fact of the matter is that they are as technologically different as

automobiles are from carriages, even though these perform the same function.¹³¹ It remains to be seen however, whether the distinctions between digital and film photographs he offers are the relevant ones.

But if we reject Mitchell's view and consider digital photographs to be bona fide photographs we are still left with the *genuine article problem* as well as with another epistemic problem for the very category of photographs. As Barbara Savedoff has suggested, the ease of manipulation of digital photographs threatens to undermine the trustworthiness of photographs in general and from this, one can predict a shift in attitudes about the authority of photographs.¹³² "[T]hose who grow up in an age where the photographic image is seen as fluid and manipulable may have trouble appreciating the aura of evidential authority surrounding traditional photographs."¹³³ With photo-doctoring becoming commonplace, we should perhaps wonder why we would continue to trust photographs these days. As Scott Walden sums up the issue, "How can the grounds for confidence apparently be so radically undermined, and yet the confidence itself remain?"¹³⁴ Call this the *trustworthiness problem*.

However, perhaps knowledge of the fact that digital images are often manipulated does little harm to our general trust in them because, as Berys Gaut has noted, manipulation potential is not what is at stake here: even traditional photographs can be manipulated but we continue to trust them, and several of the manipulations photographs undergo are acceptable.¹³⁵ For example, red-eye reduction is undergone without loss to the photograph's integrity. However, to continue in this fashion highlights the third problem, the *distortion slope problem*: where does one brake on the slippery slope between red-eye reduction and Photoshopping a crack pipe into the Pope's hand? Clearly, with the latter some line in epistemic propriety has been crossed. Let us take these problems in order.

¹³¹ Mitchell 1992: 4.

¹³² Savedoff 1997, 2008.

¹³³ Savedoff 1997: 213.

¹³⁴ Walden 2008: 108.

¹³⁵ Gaut 2010: 69-71.

§1 Mitchell

W.J. Mitchell makes a startling proposal in *The Reconfigured Eye* where he claims that what we call digital photographs are not photographs at all. Digital photographs are, as it were, only nominally photographs, sharing little in common with the film or analogue photograph. While they play the same functional role, they are different technologies that we will in time recognize as different picture types. As radical as this claim might sound, he provides a compelling analogy to horse drawn carriages left in the wake of automobiles: Both modes of transport achieved the same purpose, but automobiles are vastly different from horse-drawn carriages. Yet we've called automobiles 'cars,' in short for 'carriage' (or in Spanish 'coche,' which literally means 'coach') even though it is clear to us that cars are not the same as their predecessors. So it is obvious now that it is a mistake to think that cars and coaches are the same even though their names are connected, and on Mitchell's view, this line follows for analogue and digital photographs.¹³⁶

Mitchell supports his thesis by describing the differences between digital and analogue picture technologies. One difference is that they are produced differently: For example, digital 'photographs' are not always from digital cameras whereas film photographs are. Mitchell explains that this is only one of several ways in which a digital picture can be made. In fact, digital images can be generated *non-photographically*, which is to say, without a camera-to-object relation. Two main forms of digital picture making can be done entirely by computer: One of these is by use of editing software like Photoshop™ or Aviary™, which not only allow for easy manipulation of photographic images, but also allow one to digitally create an image from the ground up, that is, without a photographic base. This ground-up digital image making may otherwise be known as digital painting.

Another way to produce a digital image is by another kind of software type that reads 3-dimensional information from objects and translates this into a mathematical representation which can then be represented 2-dimensionally. These kinds of images are found in videogames, movie special effects and animation, to name a few. They vary in complexity and intelligence so that, for example, they can represent movement computationally without needing to record movement photographically. Several examples

¹³⁶ Mitchell 1992: 4.

of this technology are found in the *Lord of the Rings* 2001-2003 films. In one example, the computer generated character Gollum is created in part by motion capture, where the movements of the actor Andy Serkis are recorded and overlaid with digital animation techniques in order to produce the character that we see. In another example, the vast landscape of orcs standing for battle often appearing in the films, were also digitally created employing a combination of digital animation, motion capture, and even some artificial intelligence so that individual orcs in the picture reacted to the orcs that surrounded them. Both of these examples combine digital painting techniques and (allegedly) digital photography.

However, I want to note that neither of these computer-constructed pictures require the traditional camera-to-object relationship that analogue photography and film require, and so we might want to say that what they produce are not photographs after all. The former has no object basis and the latter has only a 3rd generation relation to that object after scanning it, if even that. This means, it seems a stretch to consider these amongst the candidates for digital photographs to begin with and so should hardly count as examples of digital photographs gone rogue. There are of course what Gaut calls *mélange images*, which combine this technology with others.¹³⁷ While Mitchell's diagnosis is compelling, it does seem as though he has conflated digital pictures and digital photographs, the latter being of the sort that preserves the camera-to-object relationship that analogue photographs require. And not all analogue pictures are analogue photographs so why should what appears to be digital illustration be confused with photography just because they are both made digitally?

Now, in Mitchell's favour, even when the typical digital camera maintains the camera-to-object relationship, it produces a much more easily manipulable photographic image. While the analogue photograph can also be manipulated by editing software, this is only possible after it has been digitized, that is to say, *indirectly*. The digital 'photograph' is *directly* manipulable. Digital pictures, including those that may or may not be photographic, also differ from analogue ones because they have a fixed amount of information that is determined by their bitmap. Information in analogue photographs however, is indefinite, as it is not fixed by determinable units. Digital pictures are cleaner

¹³⁷ Gaut 2010: 45.

when they are modified and have the capacity to undergo manipulation without any decay in image quality, whereas analogue photographs have a certain grain and their manipulation quickly leads to a degradation of quality.

So, according to Mitchell, since digital pictures, including those that may or may not be photographic, can be produced by a variety of digital picture making techniques that can avoid the camera-to-object relation entirely, they are not like analogue photographs. And since these digital technologies are often combined to produce an image, they render a sort of 'mélange image' as coined by Berys Gaut in his *Philosophy of Cinematic Art*.¹³⁸ Mélange images, according to Mitchell, are not photographic. Finally, since even when the camera-to-object relation is maintained there is still a vast difference in the resulting pictures, a digital 'photograph' is not a photograph at all.

There are merits to Mitchell's distinctions and indeed the differences between analogue photographs and digital ones are significant, but they are not distinct enough to render digital photographs into non-photographic pictures. Gaut points out that these distinctions only show that there is a difference in *kinds* of photographs, namely digital and analogue ones. They will vary in manipulability, quality over time, quality over changes and reproductions, overall noise, and processing, but these are not differences that distinguish them in species. It is true that not all digital images are photographs because some digital pictures are produced in non-photographic ways. But there is no reason why all digital pictures *should* be produced photographically.

So what does it mean for an image to be produced photographically? According to Gaut, what is an important feature to look for when we try to determine whether any digital pictures are candidates for being photographs, is whether they have the same generative method, that is, whether they are produced in the same way.¹³⁹ I believe a necessary feature of a photograph is that it comes from some kind of camera and both analogue and digital photographs do in fact come from cameras. One might want to argue that there are possible scenarios where a photograph can be made without a camera, such as with photograms, a primitive form of photography. Photograms can range from very simple

¹³⁸ Gaut 2010: 45.

¹³⁹ Gaut 2010: 48.

techniques, such as placing objects on light sensitive paper, or more complex arrangements that reproduce the conditions of a camera, such as rayograms. Indeed, there are quite a number of photograph-based techniques that do not involve a proper camera; even some print-making techniques involve using photo-emulsion fluid in order to copy images onto a screen that can then be used to print the copied image onto paper or fabric. But these are in effect produced by simplified versions of a camera process and thus, produced by a primitive camera of sorts.

As Gaut has argued, digital photographs (from cameras) are generated in the same way as analogue ones. The only difference between the camera-based digital photographs and analogue photographs is that in the former, the light information from objects is recorded *digitally* rather than onto photochemical film. I contend that the fact that digital pictures undergo the same process of being produced, in that they come from cameras, is a relevant feature as well. These facts trump the differences provided by Mitchell. Gaut further contends that even if modification of digital pictures is easily undergone, the mere possibility of modification cannot alone undermine their causal link because, analogously, opportunities for modification are available to traditional photographs too. So, the vulnerability to modification extends to both kinds of photographs, not just digital ones. This means *unaltered* digital photographs may remain bona fide photographs.¹⁴⁰

§2 Epistemic authority under threat

Without taking Mitchell's advice to segregate the two types of photography, we are left with the problem of how to regard the entire category of photography, when it is occupied by less than reliable varieties and forgeries are increasing in number. In her essay, "Escaping Reality: Digital Imagery and the Resource of Photography," Barbara Savedoff ponders the question of whether the psychology of looking at photographs will be altered when we come to terms with the regular use of modified digital imagery. The appreciation one has for photographs after all, as having been captured in a decisive and rare moment, is less relevant in the digital counterpart due to the possibility of its being fabricated. Likewise, in *Transforming Images*, she gives an analysis of what is special about photography, and in the final chapter, shows that the territory of photography is blurred

¹⁴⁰ Gaut 2010: 47.

by the increase of digital photography and their manipulation by editing software. While digital photography provides more occasions for creatively interacting with photographs, this room for creativity challenges the status photographs have as a reliable documentary technology.

Her prediction is that, as the digital image becomes more commonplace, so too will manipulated photographs and as a result our very attitude towards the category of photographs will begin to change. We will grow cautious in proclaiming that what lies before us is reliable when faced with a photograph because of the likelihood of its having undergone some alteration. "If we reach a point where photographs are as commonly digitized and altered as not, our faith in the credibility of photographs will inevitably, if slowly and painfully, weaken, and one of the major differences in our conceptions of paintings and photographs could all but disappear."¹⁴¹

In his essay, "Truth in Photography," Scott Walden looks at this same problem, "How can we reconcile the obvious utility of photographs in helping us learn about the world with their equally obvious ability to deceive?" He offers an explanation for our willingness to forgive photography for its possible sins. Walden's first step is to make a distinction between truth and objectivity, explaining that truth has little to do with the photographic image itself. Rather, talk of truth-value is with respect to the thoughts of the viewers of photographs. Objectivity on the other hand, is not a feature of the viewer's thoughts and instead has to do with the *process* by which photographs are generated: The image of a photograph, for example, is produced objectively by the process of the camera in contrast with the process of hand-drawn images. -

Looking at objectively generated images may provoke true thoughts and may also provoke false ones, but if these thoughts are true, then the confidence one has in the photograph was warranted. It is not warranted when coming from subjectively produced images. That is to say, that when we form beliefs from looking at photographs and these beliefs are true, there is still the matter of whether there was good reason to form these beliefs. A good reason for trusting photographic images is that the process by which they are produced is

¹⁴¹ Savedoff 2000: 202.

¹⁴² Walden 2008.

reliable. Because we have background beliefs in place that press us to trust objectively produced data over the subjective sort, we are confident in forming beliefs based on what we see in photographs.

But digital images seem to shake the confidence we once had when dealing with the once objectively produced photographic image. The photographs we look at may not in fact be produced in the objective manner we expect of them and the ease of their manipulation in this format generates scepticism about whether the image is produced objectively or not. Walden's strategy for handling this is to import Jerry Fodor's two-stage analysis of the process of visually perceiving.

Fodor describes the visual process as having a proto-belief state, followed by a full-fledged belief that considers other basic background beliefs. The proto-beliefs are formed by a combination of visual stimuli, filtered by an ordering principle in the mind and a fixed set of general background beliefs that together help to form representations of one's environment. This provides the information for the belief forming stage of the visual process, which then evaluates the character of the environment according to an indefinite number of background beliefs that are specific to the situation. For example, one does not immediately believe one sees a snake in the grass when one comes across what appears to be just that, because of a number of other bits of information that are at play, such as knowledge that there aren't any snakes in that area.

Now usually when one looks at a picture, the proto-beliefs phase about its content is blocked because one knows he or she is looking at a picture, and this is a matter specific to picture-based perceiving. Walden wants to say that looking at photographs activates the first phase of seeing but that this does not necessarily offer an account that makes them truer than handmade pictures. What differentiates photographs from handmade pictures is that their image is produced through an objective process, and a subjective process produces handmade pictures. Meanwhile, we have second order beliefs about beliefs gathered from objectively-formed (versus subjectively-formed) content, where we have more *confidence* that we can form true beliefs when they are based in the former.

When looking at pictures, people bring their second-stage background beliefs about objectivity –giving objectively produced pictures more weight than the subjective kind–

into viewing pictures and this informs whether they are confident beliefs formed about the contents of the pictures are true or false. But should they revise these beliefs because photographs can sometimes engender false beliefs? The answer is that we don't expect our perceptual capacities to be infallible so why should we expect photographs to be? "[B]oth subjectively formed and objectively formed images remain mere extensions of our perceptual capacities and, given that our perceptual capacities are never infallible, mere extensions of them are never fallible either – beliefs formed as a result of looking at pictures will sometimes be true and sometimes false."¹⁴⁵

So as far as photographs go, their potential for deception is not an issue that we don't face with ordinary seeing and despite the possibility of deception, we trust seeing and seeing through photographs categorically. Now, with the increased use of digital photographs and the ease of their modification, that *categorical* trust in photographs should be shaken. According to Walden, we can either revise our background beliefs to accord with these new conventions in photography or deny these conventions have radically changed, trusting that there is enough policing of photographic authenticity to protect their status. It is the case that when photographs are used for journalistic and documentary purposes, there are regulations that police whether the photograph is genuine and if not, one can expect reprimand for doctoring the image. Walden shows that institutions want to preserve photography's epistemic integrity and this is good reason to maintain our confidence in it.

But while there is some appeal to this heuristic account, there are perhaps better reasons for trusting photography in the wake of digital photographs. Perhaps their credibility has something to do with to the design of photographic equipment in contrast with the variability of techniques involved in drawing and this includes digital drawing. (More on this later.)

§3 Strategies for dealing with the problems

Now, let us recall the two problems mentioned at the outset. The first problem is that we don't know how we will continue to trust photographs knowing that fraudulent digital

¹⁴⁵ Walden 2008: 108.

photographs are out in the world among the credible ones. So, the first problem seems to be whether when one looks at a photograph one can believe it to be a genuine photograph because one has reason to doubt it is genuine. We called this epistemic issue the *genuine article problem*. The second problem, the *trustworthiness problem*, resulted from accepting that forgeries exist because in light of that fact, the basis for insisting on the integrity of photographs has been undermined. The third problem was whether any photograph that undergoes modification is still trustworthy and if it is, how then to give a principled account of what the parameters are for doctoring. We called this slippery slope issue the *distortion slope problem*.

The genuine article problem about photography should remind us to its familiar cousins: For example, the case of the false barns in epistemology. In this case, there is some story about driving down a country road where there is a barn in the distance. Perceptual experience gives credence to the belief that we are before a barn but in fact we have been driving in False Barn Territory and so our belief is false. The genuine article problem, therefore, manifests in a variety of sceptical thought experiments often challenging whether we have formed justified beliefs based on what we've seen. It should be of no surprise then, that photographs are subject to their own kind of genuine article problem, especially (though not necessarily) if we concede that they are prostheses for seeing.

Now, here we should reconsider the issue with respect to other devices we use to gather visual information about the world. Suppose one learns that there is a batch of microscopes that have been modified in such a way that make objects look as though they are moving, even if they are not. This threatens to undermine the data collected by scientists who use microscopes to study the movement of microorganisms. However, despite the potential for having collected data from the faulty equipment, one maintains some confidence in the technology of microscopes to furnish certain information. This analogy, then, also has a remedy for the trustworthiness problem.

If a trend in tweaking of microscopic imagery became common, one might wonder whether this would challenge the credibility of microscopes and even discredit the microscope for scientific uses. But it seems strange to wonder about such a thing in a way. Whether or not we know how a microscope works, we have some trust in the fact that it has been designed in such a way that the information it provides is objective. (There might

be reason to doubt the objectivity of any technological devices but we will attend to that in Ch. 5.) Even if there is a chance that the device has been tampered with, one tends to expect the best. We do the same for seeing. We expect that our eyes have not deceived us, nor has there been a deception of large proportion. Why then, should the possibility of a photographic forgery really change our attitude towards them?

Consider this analogy to counterfeiting money: if monies were easily counterfeited because new technology provides the tools for it, would genuine currency be devalued? Scepticism about whether the money in your hand is a genuine article may arise and with more counterfeiting, more occasions to doubt, but it doesn't seem like the growing rate of fraud would devalue genuine money entirely. In fact, the act of forgery is dependent on the value of genuine money being what it is, for a counterfeit pretends to have the value of genuine money and that value has to be worthwhile.

The doctoring slope problem is much more difficult to handle. At what point does a doctored photograph lose credibility? One must come up with a principled account of where a digital photograph has crossed a line and become a digital painting in disguise, and this depends on what amount and kind of doctoring we determine to be acceptable. To illustrate the difficulty of this matter, let us look at different levels of strictness with doctoring.

One strategy is to maintain that no manipulation whatsoever is acceptable. One might want to say that once a digital photograph has been manipulated in any way it becomes a digital painting and this view benefits from avoiding the slippery slope altogether. However, this view is too demanding, as even rather benign occasions of doctoring, such as red-eye reduction, would render photographs into non-photographs. The fact of the matter is, however, that we still trust photographs that have been modified to some extent, such as with red-eye reduction. We even accept enlarged and cropped photographs when it is believed to be to the benefit of their overall function, that is, for example, when it enhances the evidence they provide. And even taking the strictest position fails to handle the problem in a way because it fails to show why people would still trust a photograph that has undergone some of the more benign forms of alteration. When a crime scene photograph has edited out the red-eye or lens flare, cropped or magnified part of the

image, or made some other modification to the picture that comes from the camera, we might not think that these edits corrupt the information.

So perhaps we want to maintain that some manipulation is acceptable and in this vein we will find different ways to draw the line. First, suppose we draw the line at degrees of manipulation: that is, no more than 10% of the content of the photograph has been modified. This allows for some minor percentage of photographic doctoring to go without reprimand, such as cleaning up of lens flare and red-eye reduction. However, a principle based on percentages would be ignorant of the quality of information that is altered and may overlook drastic changes to the content depicted by simply altering a small fraction of the image. Since this is important, one can only assume that certain *kinds* of modification are permissible without undermining the epistemic integrity of a photograph, whereas others are directly detrimental.

We could also say that an appeal to the limitations of what might be modified in ordinary seeing should be considered but only to find a sort of rule for conduct. There are many false beliefs that can be engendered by photographs, even genuine ones, because one could create a deceptive scene for the camera. Unwritten rules against digitally drawing a crack pipe into the Pope's hand, and such fabrications are improper but not strictly because it is a weakness of digital photography or photographs in general – it would be equally possible for someone to impersonate the Pope with a pipe and stage it for a film photograph, or even to carry out this performance in person. If this is something that would be considered deceptive, then something that performs the same function but done with editing software is also deceptive. Some line has been crossed if it is done post-development (in print) or by theatrics, whether it is photographic or not. It would then not be the fault of photography per se. Still we are at a loss for offering a principle for drawing the line in the distortion slope problem.

We might consider that the photographing equipment, that is, the cameras, provide their own limitations and modifications that can be made in the camera, can be acceptably performed post-camera if they are the same kind. That means, since we can reduce red-eyes in photographs while taking the picture, then it is acceptable to remove red-eye occurrences via photo editing platforms. It seems fair that the source that we find reliable,

that is the technology of the camera, should determine the limitations of what can be done to what it produces.

So, before we continue, I think it would be helpful to categorize some of the techniques available for modification. This way one can also try to draw a line according to how one classifies the kinds of modification available to photography, differentiating them according to the level of corruption of information.

Here is a list of some kinds of modification grouped with similar techniques:

- a. Modifications available at the camera-point such as shutter speed, lens choices, and in digital cameras, a range of effects too.
- b. Size alteration, cropping, orientation.
- c. Noise reduction, sharpening or softening, contrast, colour adjustments.
- d. Red-eye reduction, removal of lens flare, inpainting (some).
- e. Adding and digitally drawing via Photoshop™ and the like, merging images, selective colour alterations, inpainting (removal of objects).

The modifications in (a) are more or less effects, distortions and other techniques available from the point of the camera. Some can be modified before a photograph is taken, some after, and both before and after a photograph has been printed. One can, for example, create a fish-eye lens effect in a photo-editing program. Group (a) type modifications are available to both digital and film cameras. The second grouping (b), are adjustments to the image that can also take place at the point of the camera and with digital cameras, the image can be easily cropped and reoriented from within. These sorts of adjustments can easily be made when developing film from film cameras. These, then, are also not a strictly digital problem, if they are a problem at all.

Group (c) and (d) are more readily available in digital cameras, –though some of these effects are also possible in the film variety– and seem to be more or less harmless even when done in a post-camera stage. Using editing software to make these kinds of modifications is not so much the problem. One can do this with film pictures with the right techniques and so the problem there is not strictly a digital one either.

Group (e) contains the most problematic type of modification perhaps because it can manifest the beliefs of the photographer more readily than the other kinds (even though, with some creativity, other kinds of effects can be used to illustrate false beliefs too).

This list already offers some clues as to what is sacred and what is negotiable in the spectrum of modification. Already, it suggests that editing that is undertaken on post-camera platforms, such as with editing software or in the darkroom, is the more questionable sort even if some kinds are not especially troubling. Group (e) type modifications stand out as particularly sensitive to this, and prove to be where the most insidious kinds of modification types are. It is with the techniques in (e) that one can digitally paint x as being next to y, and claim that the two parties were together. This is the kind of modification we need to focus on.

However, this kind of modification is not exclusively a digital one. One could place objects into a film-based photograph by, for example, double exposing the film so that the first exposure has some figure x and the second exposure figure y, thereby falsely depicting that x is near y. Consider the example provided by Paloma Atencia-Linares, in her paper “Fiction, Nonfiction, and Deceptive Photographic Representation.” She describes the technique of overlaying negatives of two different images onto a single photographic paper in order to create a fiction. In her example, an image of a cat and an image of a woman were combined to create a cat woman. Atencia-Linares claims that the cat-woman is an exemplar of one amongst many techniques that can be used to represent fictions in photographs without contravening the photographic method, as it employs normal darkroom techniques.¹⁴⁴ Not only are modifications possible with analogue photographs as well, but they can even be type (e)-modified, which is the most suspect of all. Needless to say, type (e) modifications are not a problem for digital cameras only and thus, this is not a digital problem.

Now that we know where the problematic modifications are, what kind of principle can we employ to justify their schism from the acceptable kinds? I think the answer here will once again require an appeal to the hallucination test. Is the modification in question such that it can be used to represent hallucinations? The Atencia-Linares case does employ a

¹⁴⁴ Atencia-Linares 2012.

method that can then represent the artist's hallucinations and a Photoshopped equivalent would too. The artist can use the layered negatives process or digital illustration to achieve a picture of the gnomes in her hallucination. Since these prove vulnerable to the hallucination test, then they are not photographs. Of course there are many ways to creatively tweak using the benign kinds of modification in order to get a result that accords with one's beliefs. But the suggestion here is not to test whether a photographer can falsify a photograph, because we already know he can, but whether the *type* of process he uses is vulnerable to representing hallucinations. And type (e) modifications can be used to represent hallucinations.

Consider that photographer hallucinating a gnome in her garden; would other kinds of modifications be susceptible to representing the gnome as well? Type (a) modifications like shutter speed adjustments and special lenses will not be enough to put a gnome in the picture. We won't get that gnome in the picture by cropping or reorienting the image, per type (b). Noise-reduction or colour and shade adjustments cannot produce a gnome either, so type (c) is fine. Removing lens flare, or fixing red-eyed subjects cannot be used to make that hallucinated gnome a feature of the picture, (even though red-eyes might be indication of the gnome's presence). But type (e) has proven vulnerable, so there is where we should draw a line between them.

In previous chapters I argued that the epistemology of photography is grounded in the fact that photographs are transparent. The division remains, then, that genuine photographs are transparent if they preserve a belief-independent and similarity preserving counterfactual link to their objects. And their epistemic virtue is such that it carries information that is credible in virtue of that transparency. Genuine photographs are transparent, and nongenuine ones are opaque. But, now the question is which distortions allow transparency to be preserved? Which classes are acceptable and which not? Photographs from group (e), those that have been imaginatively inpainted or enhanced, are clearly not transparent anymore and as a consequence, their epistemic integrity is lost. One might want to say that some partially tweaked photographs, using any one from types (a)-(d), are also opaque if they have been manipulated according to the beliefs of the photographer. But I would like to resist that. Again, the type (e) modifications are the ones that prove vulnerable to the hallucination test, and thus, those photographs that have been (e)-type modified are no longer transparent. The other kinds of modifications from

(a)-(d) were not vulnerable to the hallucination test so photographs that have been modified by these techniques remain transparent. That holds, even if those modifications are used to represent the photographer's beliefs because they have already been established to be immune to representing hallucinations.



FORMING BELIEFS THROUGH PHOTOGRAPHS

Two Skeptical Hypotheses for Two Picture Types

Two questions about the epistemic value of photographs motivate this chapter: the first question is concerned with providing an analysis of the *kind of information* photographs furnish, while the second is concerned with, perhaps in virtue of the first question, what kind of knowledge photographs provide. Regarding the first, I propose that photographs and other kinds of pictures provide visual information and do so in a visual way (rather than by description) but photographs are special because they provide this information in a belief independent manner, making them more like microscopes and telescopes.

I left Chapter 2 with the answer to the second question: the claim that the epistemic value of photographs is in their furnishing *perceptual knowledge*. I will reinforce that claim here by offering an exercise that illustrates the kind of knowledge photographs offer by virtue of what kind of scepticism they are susceptible to. I will contrast the sceptical problems photographs are susceptible to with problems met by other sources of belief, in particular, with sceptical problems met by testimony and later, with that of handmade pictures: I show that handmade pictures, are more like testimonial artefacts because of a difference in points on which the belief conditions rest when looking at them. This analysis will show that photographs are subject to a distinct kind of sceptical hypothesis from those faced by testimony and handmade pictures: They are subject to the same sceptical hypotheses as perception and consequently, photographs are a different kind of knowledge source. Thus, to answer the second question, scepticism about photographic information is akin to scepticism had by perceptual experiences and not otherwise, thereby showing that photographs furnish experiential knowledge about their objects.

§1 Beliefs formed by testimony

Testimony is one of a handful of sources of knowledge, besides perception, memory and introspection and it stands out from this crowd because it bears some distinctive

hallmarks. As we have not yet discussed any literature on testimony, I will dedicate this section to the topic. We will need to begin with a basic definition of what testimony is but before proceeding, it will be of use to explain the limits of this endeavour. Firstly, I do not wish to offer a definition that is synonymous with formal testimony here. What may first come to mind at the mention of 'testimony,' is a scene from *Law and Order* set in a courtroom scene where a witness offers an account of what she saw. But this is only a small part of what counts as testimony in epistemology and ultimately, not what concerns me most. Testimony happens in more casual circumstances everyday, and it is this broader category of testimony, termed by C.A.J. Coady as *natural testimony*,¹⁴⁵ that will be our topic. This includes those everyday occasions where we learn from what others tell us. This includes such things as, to name but a few examples, directions to our destination, what one should expect the weather to be like, that there are weird statues on Easter Island, and so on.

Most of the current literature on the philosophy of testimony congregates around the epistemological problems of testimony, the bulk of which can be expressed in the following dilemma: how do we reconcile the fact that much of our knowledge depends on what we are told with the fact that tellings can be unreliable for various reasons?¹⁴⁶ I will not take this dilemma on; any possible solutions will be concerned with giving principles to defend that we are warranted in believing what we are told and I only seek to characterize the problem. What is needed for our purposes is an account of what testimony is. So a second limitation is that in defining testimony, I only want the most basic and uncontroversial definition, and not a definition that will stand as a theory about testimony.

Consequently, I will not argue on behalf of any particular theory of testimony or framework underlying the debates in the epistemology of testimony. Take for example, the debate between reductionism and non-reductionism about testimony that concerns where warrant for testimonial-based beliefs rest. The debate consists of, on the one hand, reductionists claiming that the warrant on the basis of testimony for one's belief that P, depends on whether the testimonial chain eventuates in a reliable belief source such as perception, memory or reason. Then, on the other hand, non-reductionists consider

¹⁴⁵ Coady 1991: 38.

¹⁴⁶ For more on the epistemology of testimony, see Lackey and Sosa 2006.

testimony to be a reliable belief source on its own. Now, whether or not testimony is reliable in virtue of reducing to a reliable belief source or not deals with the source of reliability of testimony and these projects are generally concerned with how testimonial-based beliefs can be warranted or whether the testimonial track is knowledge-bearing.¹⁴⁷

We needn't pursue that inquiry to define what testimony is since the definition precedes the warrant question, and we needn't pursue the possible solutions or endeavour to offer any, in order to understand the problems. On the contrary, these live problems provide a better environment for this analysis as one can characterize testimony in virtue of these problems. We will now look at several definitions of testimony in order to extract the key features of testimony. Then, I make a minimalist analysis by giving an account that preserves the distinctive features of testimony proper while allowing for a wide view that includes events that may be considered testimonial for bearing those features.

§1.1 What is testimony?

There is some consensus on the fact that testimony typically amounts to, as Audi puts it, "people telling us things"¹⁴⁸ or to put it even more broadly, testimonies are "tellings generally."¹⁴⁹ However, this alone is in a sense too broad since people can tell us things like stories, jokes and suppositions without bearing any testimonial features, which is to say, that only some tellings are testimonial. In this section I will look at several accounts of testimony that I will divide into three categories: the narrow, moderate and wide views, to be discussed in that order.

The narrow view, in part, can be sourced to *Testimony*, C.A.J. Coady's seminal text on the epistemology of testimony in which he describes a testimonial act as the following:

C1) someone stating *that P*, as evidence that P is the case, and with the intent to offer this statement as evidence.

¹⁴⁷ For more on reductionism and anti-reductionism about testimony see, for example, Coady 1992, Fricker 1987, Goldberg 2001, Lackey 2006*b*, Lehrer 2006.

¹⁴⁸ Audi 1997: 406.

¹⁴⁹ Fricker 1995: 396-7.

- C2) this person is competent or in a superior epistemic standing to attest to P
- C3) this person does so in response to a relevant and open question.

This account is appealing because it can exclude scenarios where a telling has been offered but was only meant to be taken as a supposition or joke by (C1), do away with cases where we are told something by a madman on a rant by (C2) and eliminates the situation where an overheard and unrelated statement is taken to be testimony that P is the case (C3).

Coady's account is clearly modelled on formal testimony but while formal testimony can inform a general characterization, this account doesn't substantially distinguish itself from it: In (C2), the condition that the testifier is competent and reliable in his testimony *that P* is something that can be regulated in formal testimony. While it is true that we do not value the babbling of a madman as evidence for whatever they say, these incidents still count as testimony in a casual sense. (In this particular instance, as bad testimony.) According to Miranda Fricker, and this is generally accepted, the criteria for testimonials should have "no restrictions on subject matter or [the speaker's] epistemic relation to it," but should instead have a less stringent requirement – simply that the participants are competent language users.¹⁵⁰

Coady's view consequently fails to include a wide scope of casual testimony that requires accommodation if one hopes to address the epistemic problems of testimony. For example, if the account of testimony includes a testifier who is deemed honest and reliable, then the possibility of intentionally giving false testimony falls out of the picture but for the sceptic of testimony it remains a problem in need of address. As aforementioned, a basic dilemma that preoccupies epistemology of testimony is how to reconcile that much of what we know has been acquired by testimony of the casual variety and yet, without much discrimination regarding the reliability of those who tell us these things. As Jennifer Lackey points out, Coady conflates two investigations in the testimony circuit: one is offering a definition of what testimony is and the other is offering criteria for the kind that warrants belief.¹⁵¹

¹⁵⁰ Fricker 1995: 396-7.

¹⁵¹ Lackey 2006*b*: 180.

In P.J. Graham's criticism of Coady's view, he contends that the narrow scope of the account can be attributed to wanting to preserve testimony as potential evidence, and yet not all testimony is potentially evidence for something. Nor is it potentially knowledge bearing, and it needn't be. Most testimony preserves the conditions of being offered up as a declaration that something is the case without actually being evidence for that. Since Coady's account is too narrow, Graham offers a moderate alternative: a testifier is

G1) Someone stating that P, as evidence that P

G2) This person intends his audience to believe he is a reliable source of that information

G3) *That P* is directed to an audience that poses the question. (Note: this last condition does not necessarily require that the question be posed explicitly.)

Unlike Coady's view, this account does not limit the domain of testimony to formal or near-formal testimonials, or ideal testimonies, and instead allows for everyday cases of testimony that in fact, do vary in quality and levels of formality, that is to say, the commonplace scenario of being told things by people whose epistemic standings remain ambiguous.¹⁵² But while Graham's own view is less demanding than Coady's, it is still considered too narrow by others because it fails to accommodate, to name one significant example, written testimony that is found posthumously.¹⁵³

In the book *Knowledge in Perspective*, Ernest Sosa attempts to provide a view that is broad enough to allow for posthumous documents as testimonial artefacts. In his account, it suffices if there is a communication of someone's thoughts or beliefs and it is directed publicly so that it *at least* carries the intention to be heard.¹⁵⁴ Similarly, Robert Audi claims that an account of testimony should...

...[capture] the idea of saying something to someone. Testimony is always given to one or more persons (to oneself perhaps, in the limiting case), but the audience may

¹⁵² Graham 1997.

¹⁵³ Hence, Lackey calls it the moderate view in 2006*b*: 184-185.

¹⁵⁴ Sosa 1991: 219.

be hypothetical: a diarist describing atrocities for posterity may not know whether anyone will read the testimony.¹⁵⁵

Also in favour of a narrow view, Elizabeth Fricker suggested that testimony involves

F1) a speaker S believes *that P* and wishes to communicate *that P*

F2) S asserts *that P* to another party Q (where Q can be real or imagined) where Q is a competent language user and shares common-sense semantics.

F3) So that Q then comes to believe *that P* in virtue of understanding the utterance of S.¹⁵⁶

These accounts have in common less constraint on the epistemic standing of the speaker and preservation of an informational link in the conditions for testimony (although they differ in what constitutes this preservation).

However, Jennifer Lackey points out that not all communicative links are testimonial and “[a]n adequate account of testimony should recognize the distinction between entirely *non-informational expressions of thought* and *testimony*.”¹⁵⁷ She not only argues that distinctions need to be made between utterances that are not informational nor meant to be, and utterances that are meant to be informational. Lackey’s distinction allows for *non-linguistic* acts of testimony that preserve this informational link, such as gestures.

Something needs to be said then about the domain of testimonials. Graham and Coady have characterized testimony as a *statement* and the standard account of testimony is that it is a speaker-made public assertion of a declarative sentence.¹⁵⁸ Audi’s proposal of *attesting* is, “a broad rubric for the oral or written statements that concern us.”¹⁵⁹ Fricker’s account more explicitly states that testimonials involve utterances that generate beliefs in other language users.¹⁶⁰ The statements can be spoken or written but testimony is typified as a

¹⁵⁵ Audi 1997.

¹⁵⁶ Fricker 1987: 68.

¹⁵⁷ Lackey 2006a: 3.

¹⁵⁸ Such as, but not exhausted by, the accounts of Audi 1997, Coady 1992, Fricker 1995, Graham 1997, and Sosa 1991.

¹⁵⁹ Audi 1997: 406.

¹⁶⁰ Fricker 1987: 70-72.

speech-act. However, Lackey gives examples of informative gestures that, if they are performed with the intention of conferring information, should be considered testimonial as well. One might consider whether an affirmative nod to a question or pointing to a location when asked where something is can be testimonial acts.¹⁶¹

She subsequently offers an account of testimony that can accommodate gestures and ostensive behaviour that may be testimonial. In her view,

Sarah testifies that p , by performing an act of communication a , if and only if, in virtue of a 's communicable content, either of the following obtains:

- 1) Sarah (should have) reasonably intended to convey that information or
- 2) a can be reasonably taken as conveying that information.¹⁶²

The upshot here is that, so long as an act communicates some information, and does so in a way that can be taken to be intentionally informative, it is testimonial. This of course sidesteps the non-informational scenario, on one hand, by putting emphasis on the fact that testimony is *offered* by someone, that information is *given*. On the other hand, this remains broad enough to preserve a variety of testimonials, such as documents and recordings, as well as gestures, all of which confer information in a testimonial fashion. It is not difficult to imagine a place for pictures here but more on that in a later section.

§1.2 Extracting a minimalist account

Despite the variation found among the above accounts, and even variation in where we might place ourselves among these views, we can still pick out key features of testimony in order to form a minimalist account. We will only extract the barest set of features because that is all that is needed for my goal in this section, and by being bare, one will not be beholden to any particular theory of testimony. So, to begin, I think one can say that an uncontroversial feature of testimony is that it is an act of communication. That testimonials have a communicative feature is hardly contentious, albeit, it is a mistake to render testimony and communication identical. Even Lackey's liberal view (as mentioned at the end of the last section) posits that an act of communication is only testimonial if there is

¹⁶¹ Lackey 2006*b*: 186.

¹⁶² Lackey 2006*a*: 19, n. 5.

good reason to believe it can be taken to be informative, as not all acts of communication are intended as such.¹⁶³ So what differentiates testimony from other forms of communication? To be testimonial is to communicate information in a special way and I will here show how, by implication, testimony is thereby 1) reportive and 2) belief dependent. Let us take these in order.

a) Reportive

Testimony, like all communication, is a public act, as opposed to a private one, which simply means that a testimony has an audience of any number. This should be held in contrast with information obtained, for example, by overhearing a soliloquy performed by someone who thinks they are alone in a closed room. Overhearing someone talking to himself is not testimony because that soliloquy was not a public report. Furthermore, the scope of publicity is not limited to situations involving the testifier's presence or oratory practice. Testimony can, as previously mentioned, be read or heard posthumously, as offered by recordings, publications or scripts, of the assertions held by the testifier.¹⁶⁴ It can be communicated non-verbally in some cases. The key feature here is that information is being conveyed to someone else, for someone else, and this makes it public. What is more significant is that this piece of information is meant to be understood. Insane rants made on the street may appear to be directed publically but in fact, may not be intended for anyone.

Communication can take a variety of shapes and media. Telegrams, Morse code, street signs, and facial expressions are but a few examples that show this variety. These are all means of communicating information, they all tell us of something, but they do not all offer testimony. It is odd to say that a street sign testifies that one should stop or that a raised eyebrow testifies that one is surprised. While these instances are informative (of how to behave in one's vehicle or of someone's reaction to a situation) one expects testimonial acts to answer a question that has been posed, even if it was not intended for whoever overhears it. To be reportive is to intend the information for someone else.

¹⁶³ Not exhausted by Audi 1997, Coady 1992, Fricker 1995, Graham 1997, Lackey 2006*b*, Sosa 1991, etc.

¹⁶⁴ Sosa 1991.

While I side with Lackey in wanting to avoid characterizing testimony as a speech act, even the liberal view might preserve the requirement that testimonials require the platform of a language game. After all, it is not unreasonable to expect the participants of the communicative act to have certain basic things in common in order to carry it out. One can expect a failure of communication between two people speaking different languages. When a message is transmitted in a secret code, the person sending this code expects that it can be deciphered by the right people, and so on. And the communication between a dog to his master that there is danger might be successful. But perhaps this is not to be considered an occasion of the dog's having offered testimony because some basic language criterion is missing. (I am neutral on this debate.) So some constraints may be needed to distinguish the kinds of creatures from which we can obtain and give testimony –e.g., they must be our epistemic and linguistic peers or be in a position to convey information in a manner that can be understood by the testifier.

Anyhow, such parameters do not need to be drawn here. After all, a minimalist account only serves to extract hallmarks of testimony, and not work out exclusion principles. Nonetheless, one should acknowledge that the communication link succeeds with the help of at least a common platform. Testimonies are generally intended by the speaker to be believed and being reportive encapsulates this feature of testimony. It is enough to say that, in other words, testimonies report something in a variety of ways that include speech acts and gestures.

b) Belief dependent

As an act of communication, it is necessary that testimonials link a speaker and hearer in a particular way (the nuance of this to be explained shortly). While there is in fact disagreement over how the link between two parties might be obtained properly, –such as whether that information is explicitly publicly directed, whether the speaker has a special standing or competence with respect to his information, or whether the speaker has made an informal declaration of one fact or another, are a few examples, – the fact that this link is a necessary feature of testimony is agreed upon.

Furthermore, the communication of information between the two parties is a one-way relation in testimony. It suffices that person A offers information to person B without reciprocation, even if reciprocity is often the case (in which case, we have another instance

of testimony offered by B to A). Because of this feature of testimony, one party (B) is always dependent on the other (A) as a source of information, and as described by Sherrilyn Rousch, testimony is a “species of everyday knowledge, [of] the kind we acquire by believing what others attest to[.]”¹⁶⁵ What B in the end comes to believe must in turn depend on the beliefs of A, even if eventually B decides not to believe it.

Because testimony is characterized by this one-way information track, the testifier offers some information, that P is the case, for the benefit of others, and that audience subsequently forms a belief on the basis of this testimony. There one finds a special dependence relation that is not found in other reliable sources of belief, such as, perception or reason. In those sources of belief, one does not depend on the beliefs of others. Because information had by testimony involves a dependence on what others say, there is also a kind of dependence relation on the intentional states of the testifier. So, I believe, all accounts can agree that another distinctive feature of testimony is that it is belief dependent. This should be obvious when we consider the vulnerability of formal testimony to being perjurious because it involves uncertainty about the credibility of a witness who may not be telling the truth. We cannot be sure whether what they believe is true or whether they believe it to be. This possibility contributes to the epistemological problems of testimony as part of its concerns stem from the worry that believing what others say is not always reliable. Furthermore, if we consider the sources of testimony, we might be struck with the fact that we do not receive testimony from rocks or molluscs, but rather, from creatures with belief states.

It is not controversial that a distinctive feature of testimony is that it relies necessarily on the fact that it is declared by someone and is mediated by that person’s beliefs. Audi remarks:

If we start by focusing on formal testimony, we might conclude that as a source of belief testimony is quite unlike perception in that testimony produces only inferential beliefs of what is said, whereas perception commonly produces non-inferential beliefs about what is perceived. The idea that beliefs based on testimony

¹⁶⁵ Roush 2005: 17.

arise by inference from one or more premises is probably natural in relation to formal testimony.¹⁶⁶

Testimony is reported by way of an agent, which is to say that someone says such and such a thing happened and this is in accordance with his or her beliefs. The content of the testimony then, has a counterfactual link to the beliefs of the testifier, but not necessarily to, say, whatever his belief is based on. In this sense, testimony is belief dependent and our beliefs formed by way of testimony are dependent on the beliefs of the testifier. This makes testimony vulnerable to failure in two places. Firstly, there is always a possibility of dishonesty in the testifier and secondly, even the most honest testifier can make a false claim because they do not believe the claim to be false. They may have been deceived, innocently mistaken or were hallucinating when they witnessed what they claim to have seen. In fact, part of what makes testimony different from other belief sources is that its second-handedness gives it this second point of epistemic vulnerability. (More on this later.)

Dependence on belief is not to say that the testimonial utterance necessarily corresponds with the actual beliefs of the testifier but that it will correspond to some intentions: For example, if the testifier wants to deceive his audience, he will make a claim contrary to what he believes to be true but this still depends on his belief that this is a false claim. Because of the belief-dependence of testimony, believing the testifier involves both trust and reliability conditions. If the testifier believed he saw a crime take place, he will attest to this and try to convince you accordingly.

§1.3 From speech acts, to gestures, to pictures

I mention in the last section that testimonies are usually expected to be speech acts and that I do not believe this is a requirement of testimony, at least not in its narrowest construal. A speech act in a broader sense could include a number of non-verbal ways of communicating something with the same content as the spoken or written counterparts. For example, there are formal languages that are gesture based, such as American Sign Language, which uses gestures to communicate what would normally be spoken or

¹⁶⁶ Audi 1997: 406.

written. As a formal language, it would be strange to say ASL does not consist of speech acts of some relevant kind but if we accept this, then we accept that gestures can count as speech acts. And those who use ASL can certainly offer testimony without literally engaging in speech acts. So, it seems sufficient to be able to engage in a common platform for the communication to succeed and this can succeed with a formal language based in gestures, so why not informal gesturing in lieu of speaking, and even drawing when appropriate?

First, let us look at gestures. As mentioned in the last section, Lackey's view makes allowances for this: testimonial conditions may obtain under performed instances of testimony, that is to say, gestures may suffice to communicate that some P is the case. It seems odd to claim that someone both illiterate and mute could not testify that P is the case. One might ask the illiterate mute if they saw someone running down the street with a television and in which direction. They could nod positively and point south. What is preserved of the language criterion though, is the common language between parties. One could not get an answer to these question had the illiterate mute not been able to understand the language in which the questions were posed.

So what then about testimony by pictures? There are a number of ways a picture could answer a direct question and report something. One could apply the last example of an illiterate mute here: The illiterate mute could've opened up a map and pointed to where the assailant went but also, he could've drawn you this map. If you were to ask him what the culprit looked like, and by sheer luck he was a rather talented artist that could render an accurate picture, then you would be better off than if he had given a description.

Offering a picture might be the best thing to do in some cases. When a child asks what a platypus is, showing a drawing in a book is often most effective. Better still, if they ask about mythical beasts, one might have to draw a picture for them. With these examples, I want to suggest that one can communicate information to others without saying it, and not only by gesturing at the right time, but also communicate with the use of props like pictures. Again in these cases, we must expect that those we want information from can understand the question we pose. There could even be some cases of testimony offered by pictures that inform us as to what someone looked like, by depicting those properties (just as by posthumous literary reports), for the purpose of communicating that information.

So it is on this basis that one might want to consider depictive forms of testimony. Some pictures are meant to report on how things are by representing them –e.g., biological illustrations report on details about flowers, or documentary paintings report on, say, what Henry VIII looked like. Some pictorial representations are generated from verbal testimony –e.g., during police investigations, people are often asked to describe, say, their attacker to an illustrator who then produces a sketch based on that verbal testimony.

It might be said that paintings are often fictional and this causes problems for their status as testimonial. But given the characterization above, there is no reason why testimony cannot confer information that is fictionally true, aside from facts about the world.



Figure 5.1: Mark Ryden "Christina."

Consider the Mark Ryden painting, *Christina*. One can make claims that are true or false about it: One can tell a friend that the girl is carrying a bumblebee or that she carries a horsefly. Conveying information about fictions can be testimonial if one is, say, asked about the details of a book. For example consider a scenario where a student who failed to read *Jude the Obscure* might ask another student about it, and the latter asserts that Jude Fawley did not attend Christminster.¹⁶⁷ This is testimonial evidence about a fictional character's life, with a truth value. If we can accept that this is a testimonial act even with its being a matter of a fictional subject, because there is no real Jude nor Christminster, then we can accept fictions represented *pictorially* are testimony as well. There is no reason why the fictional possibility of paintings and drawings would preclude them from being testimonial.

Since theories of testimony tend to characterize them as assertions and assertions are verbally communicated, one might still resist the move to include pictures and gestures. I would like to point to the fact that the standard definition embeds an expectation that testimony be a speech-act probably only incidentally because the literature tends to focus on the assertive feature of testimony. The philosophical literature on assertions has after all, been a linguistic project. This could simply mean there hasn't been enough philosophical inquiry into the epistemic value of pictures along these lines. Regardless of this, as mentioned before, not all accounts agree with the speech-act characterization of testimony these days. New literature shows interest in other kinds of testimonial behaviours and artefacts like pictures can square nicely within the more liberal views and we only need a most liberal view for our purposes. One can get testimonial evidence from a non-speaker where the act of communication carries the bare and essential distinctive features of testimony.

§1.4 The character of scepticism about testimony

Now, we have undergone the above stages in order to acquire the tools to analyse the character of scepticism about testimony, because this will be compared with scepticism about perception in a later section. The scepticism that arises when considering belief in

¹⁶⁷ Hardy 2000.

someone's testimony is traced to two distinct places where testimony can go wrong. The belief sensitivity of the information also makes it susceptible to multiple points of possible error. In cases where one is passing along testimony from another person, the passing along of *p* eventually reaches its origin in some first-hand knowledge acquisition that *p*. In this testimonial chain, the points at which testimony can go wrong multiply.

There are two points of vulnerability special to forming beliefs from testimony: one must depend on the reliability of 1) the testifier, who may provide false information for a variety of reasons, and also 2) the process by which the testifier acquired his belief, which is also prone to misinformation by deception or mistakes.¹⁶⁸ The first point of vulnerability can be traced back to belief dependence because testimony depends on a testifier's claims, which depends on what they believe and also on what they want to tell you. The testifier might be upstanding but even a trusted source of information might have been fooled with false barns or slipped some LSD. The latter point of vulnerability, which has to do with the process by which the testifier obtains information, is a problem is not only met by testimony.

§2 Scepticism about perception

As a reminder, the goal of this chapter is to contrast the sceptical problems faced by testimony with that of perception so that we can analyse photographs according to these differences. In this section, we will attend to the character of scepticism about perception. We know that perception is not immune to scepticism about its content and is clearly subject to its own set of sceptical problems. While scepticism about knowledge needn't particularly be scepticism about the perceptual route (though that is much of it), for our purposes we want to look at what role perception plays in knowledge acquisition, what doubts we should have about its ability to furnish knowledge in contrast with testimony. Again, I will proceed without taking a stand on the appropriate theory for handling the problem because the purpose of this chapter is to characterize the problem for the comparative analysis with photographs and a solution is not required for that.

¹⁶⁸ Another point of vulnerability can be found in transmission, as the hearer of testimony might misunderstand what was said. But this vulnerability isn't exclusive to testimony: one might misperceive, misremember, and miscalculate first hand experiences as well.

As with testimony, much of our knowledge has been and is gained through perceptual experiences and we trust perception to be knowledge bearing. Both testimony and perception are subject to the same kind of paradox: both are the sources of a significant bulk of our knowledge –i.e., so much so that without knowledge borne from these sources, we would know very little– and yet, both are vulnerable to various problems that challenge and potentially undermine their epistemic worth. Furthermore, like testimony, the default attitude towards perceptually obtained knowledge is, as it were, *seeing is believing*, unless of course we are given evidence to the contrary. Despite the possibility of defeating information, the possibility of error, and tendency to fail, confuse and delude, we still consider perception a main source of knowledge and generally trust it to be a reliable information channel.

There are two main problems of perception, one is the business of philosophy of mind and the other is epistemological. The former investigation deals with the nature of perception and grapples with the paradox of seemingly being in (direct) contact with the world, while mistakes in perception give evidence to the contrary. The arguments from hallucination and illusion are the usual challenges to the position that perception puts us in contact with reality: an illusion has a real object of experience but it is experienced incorrectly by more than one person, while hallucinations are private to the person hallucinating.¹⁶⁹ The illusion of a straight twig protruding from water that appears to bend is available to everyone, whereas the hallucination of a bending twig can only be seen by the one hallucinating. Both generate a similar problem: if what we see may be skewed or false, then perception doesn't always get us to the facts.

It is more important to attend to the latter because, again, the main concern of this thesis is epistemic. The epistemic problem of perception will bear more relevance to the analyses of sceptical problems as met by testimony and even the general analysis of photographs. The arguments from hallucination and illusion are meant to show how we are not as intimately connected with reality as we think, but they can also function as sceptical hypotheses, that is, generate doubt about the credibility of perceptually sourced knowledge. Because

¹⁶⁹ Not to be confused with van Fraassen's use of hallucination.

perceptual errors are possible, some worry is raised about how perception can be knowledge bearing.

We take for granted that perception is reliable because it furnishes much of our knowledge. On one hand we have reason to doubt that what we see *now* is informative, because if we were hallucinating we wouldn't know otherwise, and on the other hand, we have reason to doubt perception itself is a knowledge-bearing source. This is because we generally would not know the difference between hallucinatory and veridical experiences. Now, in cases of hallucination and illusion, the causes for doubt can in principle be eliminated so they cause a temporary problem. The more difficult problem emerges with a more radical kind of sceptical hypothesis: These sceptical hypotheses target perception of the external world and suggest that we cannot have knowledge because they are outside the realm of testability and doubt-elimination. The recipe for this sort of sceptical hypotheses consists of alternative contra-perceptual explanations for our experience of the external world. These examples give sufficient reason to doubt we genuinely perceive the world, and in virtue of that doubt, challenge whether we can be said to know anything had by perceptually formed beliefs.

Consider Descartes's experiment: this involved taking the position that all of his beliefs were subject to doubt and the most basic beliefs, like having a body, were tested against the possibility of an evil demon determined to deceive him about it.¹⁷⁰ When one considers whether one can eliminate the possibility of a deceiver with such power over the senses and also outside the realm of our knowledge, two unnerving conclusions arise: one must accept that one can never discount the possibility and that thereby, one can never know even what seems to be obvious.

The brains-in-vats experiment challenges the assumption that our experience affords us certain facts –e.g. that we have a body– since it is not impossible that those experiences come from direct electro-chemical stimulation to the brain; a brain that might in fact be a bodiless mass in vat.¹⁷¹ One might even want to think of the world depicted in *The Matrix* (1999), where people's experiences and memories are completely fabricated for one reason

¹⁷⁰ Descartes 1996.

¹⁷¹ Putnam 1999.

or another. These hypotheses challenge what we take for granted to be tried and true knowledge by perception. They provide a similar recipe in that by offering a plausible alternative explanation for our perceptual experiences, in this case, that they are generated by something other than the external world so that what we see is not causally connected to the object of our experience. Take for example, how we know that we have hands on the basis that we see and use our hands. If we cannot discount the alternatives, such as any of the scenarios above, we cannot be sure we have hands after all. We can no longer be certain of such a basic thing.

I've skewed the attention to the external world problem slightly, as the sceptical hypotheses are usually experiments that determine whether we know the most basic things are true and whether we can broadly speaking know things when there are plausible alternatives to which we must concede there is a lack of certainty. So, this is less than a direct challenge to perception. But, since when I consider these more radical sceptical hypotheses I have to admit that I cannot discount this possibility, the consequence is that I cannot know anything for sure by virtue of perceiving, and thereby, nor can I assume the reliability of sense experience on principle.

The milder sceptical hypotheses of hallucination and illusion and the like, target real world mistakes made in perception rather than plausible major deceptions like the evil demon, brains-in-vats, and *The Matrix*, etc. These pose a problem for perceptual learning on a lesser scale in that they only suggest perception might fail us on a day-to-day basis. Sharing the same motivations as the radical sceptic's hypothesis –cashing in on the possibility of mistakes about the kind of visual experience we are having– the former type of problem can possibly be handled by an appeal to the frequency of successful perception over failure –e.g., the reliability of perception can be established probabilistically. But the more radical sceptical hypothesis is more detrimental. This is scepticism about the very reliability of perception as a belief source, because if we cannot eliminate the possibility of this kind of error then we must operate on faith to some extent in order to believe it reliable. And we cannot use the probabilistic method here either, for the very process is subject to doubt, and we cannot determine which are the genuine successes.

That is the epistemological problem of perception in a nutshell, and one can see that some work is cut out for those who want to solve it. Fortunately, I am not about to handle the

problem, nor will I discuss the theories that do. The question now is how this compares to scepticism about testimony, what distinguishes the scepticisms, and then, how to treat photographs according to that distinction.

§3 Differentiation between the problems of perception and testimony

In this section, I will explore how beliefs formed by perceptual experience are vulnerable to a different sceptical hypothesis than that faced by testimony. Both sources of knowledge have different processes for transmitting information, so it is fitting that differences in sceptical vulnerability correlate with this difference and that subsequently, their respective conditions for failure also differ. Because of this we should consider what conditions must be in place to render testimony unreliable and the same of perception. Finally, by attending to the features that distinguish them from each other (and from other sources of knowledge), we will see that the vulnerabilities of testimony are dependent on its belief-dependent hallmark, and consequently its vulnerability to the hallucination test. The character of scepticism about perception on the other hand, does not involve the beliefs of others and is not vulnerable to the hallucination test.

§3.1 Where are perception and testimony vulnerable?

There are tried and true situations that will generate failures both for testimony and for perception. For example, in testimony one can be sure that what a pathological liar has said is not to be trusted even though there may occasionally be a lucky correlation between what he says and what is true –e.g., he may mean to lie about something but accidentally tell you something that is in fact true. So, the recipe for undermining the reliability of testimony involves undermining the reliability of those that offer it. Meanwhile in perception, we know that some things can exacerbate the tendency to make mistakes about what one sees (and hears) such as tired eyes, psycho-active drugs, and being tricked: these too can occasionally correlate with how things are by dumb luck.

Undermining the reliability of perception then, involves a malfunction of the process of perceiving. We can conclude from this that reliability of testimony is always vulnerable to the possibility of dishonest or unreliable people, but that perception is not *necessarily* subject to this vulnerability. Mistakes in perceptions are (in everyday cases) one's own.

Learning from testimony requires the participation of others, participation that is not required in learning from perceptual experiences. To illustrate, consider how one can learn about the animal skeletons in the National Museum of Natural History in Paris in either mode: by testimony, one learns from word of mouth, and by perception, one learns by stumbling upon them while wandering the museum. When one learns about the animal skeletons from the testimony of others, one expects that they have seen it themselves or heard about it from someone else. In any case, your knowledge about the exhibition will be based on what you have been told by another person and eventuate at someone who has actually seen these skeletons (if, of course, the chain is uncorrupted). Meanwhile, stumbling upon it on one's own does not require someone else's participation. This highlights two differences between learning from testimony and perceptual learning: 1) epistemic co-dependency and 2) belief dependence are both necessary features of testimony but not necessarily features of perception.

1) Epistemic co-dependency

There are several sources of belief: often these are categorized as memories, introspection, as well as perception and testimony. Among these, there is some discussion about the status of perception as an epistemically basic source of knowledge; that is to say, it does not require a previous stage of knowledge from another source, like reason. According to Audi, "To call a source of knowledge (or of justification) *basic* is to say that it yields knowledge without positive dependence on the operation of some other source of knowledge (or of justification)."¹⁷² Testimony, on the other hand, is not considered basic, and this is because it necessarily depends on other epistemic sources. For example, someone honestly testifying about what they have seen will depend on their having a perceptual experience (whatever the quality of that experience might be). While we needn't *assess* the value of testimony in a reductive fashion, –i.e., in virtue of the information channel eventuating at a reliable source– testimony nonetheless depends on contact with a basic source. One simply needs experiences to speak of.

Now, there might be confusion regarding other sources of belief that depend on other sources, such as memory. For that one must have first-handedly had the experience to

¹⁷² Audi 2002: 72.

begin with, (save the hypotheses of memory being implanted as discussed in Russell).¹⁷³ However, the point about basic-ness is really a matter of what one needs as justification for one's beliefs. One can (arguably) justify one's belief that there is butter in the fridge based on having recalled putting it there. It is a matter of fact that perception, memory and reason do operate in conjunction with one another, but perception can, in principle, operate independently especially as a source of justification. Because it need not depend on other sources of belief, perception is considered a basic source of belief. Testimony cannot operate without other sources of belief and is thereby, in this sense co-dependent.

Admittedly, the current analysis of the basic sources of knowledge has its problems, but that project need not amount to the same thing as what I propose as epistemic co-dependence. One can acknowledge that testimony is co-dependent as a character of its operation without committing to an analysis of the epistemic value of testimony on these terms. Regardless of one's position in that debate, there is a non-technical sense in which testimony and perception are different because of their degrees of separation from their sources and dependence relations. Co-dependency is a hallmark that distinguishes testimony from the rest.

2) Belief dependence

Other sources of belief can be co-dependent on each other to operate, but testimony is further distinguished from them in being belief dependent. We have described how it is always dependent on the intentions of the testifier in previous sections. While this might be true of perception on occasion, all testimony is belief dependent and the beliefs of others necessarily play a role in testimony.

To further understand the belief-dependence of testimony consider how being told by an honest friend about the Natural History Museum in Paris depends on their belief that there is such a place. If they were deluded about the location and believed the museum was instead in Las Palmas, they would convey information according to their mistaken beliefs. They would attest to the museum being in Las Palmas. What they believe is what they would recount to you. Though it can be susceptible to mistaken beliefs, perception is not belief dependent in this way.

¹⁷³ Russell 1927: Lecture IX.

Beliefs formed from perceptual experiences are generally considered to furnish first-hand knowledge. Perception is not necessarily dependent on the beliefs of others even though, on occasion, some sceptical cases may suggest otherwise (more on this later). That one's perception does not counterfactually depend on the beliefs of others does not automatically amount to being directly or immediately in contact with the objects of perception, and is not to be confused with a naïve realism-like claim about the nature of that experience, but is rather a description of the kind of source it is. Whatever the character of perceptual experience, having perceived something amounts to being in direct or immediate epistemic standing to that information, no matter what theory of perception one is beholden to. When one sees the animal skeletons in the museum, one does not depend on the beliefs of others for that information. To put it simply, it is just the closest people get to objects.

What causes testimony to fail often depends on what other people believe and because of this dependence, testimony has a vulnerable spot that perception does not. By being dependent on others, and depending on the beliefs of the testifier, it is a belief dependent source of knowledge. And because the testifier can fail to convey truth either by making a mistake or by purposeful deception, scepticism about testimony is vulnerable at this point. But there is no equivalent in perception.

What will make perception unreliable depends on the failing of one's own senses or large scale deceptions, like evil geniuses and brain-in-vat situations. But testimony would also be vulnerable to this point of uncertainty. If it is the case that those large scale deceptions are a fact of our reality, the beliefs of others would still be a point of vulnerability to be factored in addition to that. And while the sceptical case offers the possibility of one's sense being manipulated there remains no *necessary* role for beliefs of others in perception like there is in testimony.

To conclude, there is clearly a matter of a difference of components between perceptually based knowledge and the testimony-based knowledge. That one can testify only if one has had a previous experience to offer, misrepresent, or fabricate completely from one's imagination, is hardly a contentious affair. Testimony's passage requires someone to offer it (even if this someone's thoughts are offered posthumously in a diary).

In previous chapters, I have used the hallucination test to see whether certain devices or instruments of observation were belief dependent by testing whether they were vulnerable to representing hallucinations or not. In this case, we do not have an instrument per se, but we do have a means of transmitting information that can be held accountable to this test. If the testimonial belongs to someone who has been hallucinating, their testimony can convey the details of the hallucination. While this is not always the case, testimony is vulnerable to representing the hallucinations of others. Knowledge acquired through perceptual experience does not bear this connection to other people's beliefs, and it is not vulnerable to the hallucinations of others.

§4 Photographs and other pictures

We look to photographs to furnish information about objects and we regularly trust them as sources of visual evidence. Because photographs are a kind of picture, their evidence type is sometimes lumped in with other pictures like paintings and drawings, which also furnish visual evidence about objects. But in this section I will show that there are features of photography that undermine this assumption and that photographs are distinct from handmade pictures in a significant way. Insofar as perception is generally agreed upon as a reliable source of belief (barring sceptical cases, in which case the point about photographs is moot anyway) here I will show that the sceptical issues that arise for photographs are of the same kind that arise for perception.

§4.1 Forming beliefs (and doubts) through photographs

This section will be dedicated to analysing what kind of sceptical problems photographs are subject to. We know there are certain conditions that make us distrust photographs, particularly the heavy use of Photoshop™ we may come across every day. And we have begun to address how handmade pictures are also subject to distrust. However, here I will show that they are not both subject to the same sceptical conditions. As already discussed in previous chapters, handmade pictures are belief dependent whereas photographs are not.

I defend the claim that photographs are *transparent*, and they are transparent because when we look at a genuine photograph, our visual experience of the objects photographed is such that a belief independent and similarity preserving counterfactual link is preserved.

This does not mean we get accurate or perfect or true information, –as we might not get that from mirrors, microscopes or telescopes either– but that photographs are like these other enhancements for seeing. Now, in §1 we concluded that testimonies are subject to scepticism about the testifier and that this is because testimony is belief dependent, which is to say that the content will always counterfactually depend on the beliefs of the testifier. This means that even honest testifiers are subject to giving false testimony if their beliefs do not correspond to reality, and also that the knowledge we gain from others is vulnerable to that fact of the matter. We’ve also established that handmade pictures are also belief dependent and by sharing a hallmark of testimony, are cousins of testimony. One now needs to consider if it is possible for photographs to be testimonial in some way.

Consider the following pictures of a gallery in the National Museum of Natural History, Paris, as two potential candidates for testimonial evidence. The first picture (figure 5.2) is a photograph taken of a specimen in the museum and the second picture (figure 5.3) is a drawing that same specimen. (Both by the same person.) These pictures are presented as evidence of the content of this gallery being inclusive of a vast assortment of animal skeletons. One can accept or deny this claim for a variety of reasons. One might wonder of both pictures whether these are really from the National Museum of Natural History and other such questions about the claims made about what the pictures are of. We can ignore these for our purposes because they apply to both kinds of pictures and we are looking for distinctive ones. One distinctive question concerns whether the content of the drawing can be trusted: one might wonder whether the drawing was made by a reliable source, whether the artist was free of psychedelic drugs or psychotic episodes at the time, and so on. But note that those questions do not apply to the photograph.



Figure 5.2: Photograph from Galerie de Paléontologie et d'Anatomie Comparée, Muséum national d'Histoire Naturelle (Gallery of Palaeontology and Comparative Anatomy, National Museum of Natural History, Paris, France), Gillian Reid, 2013.

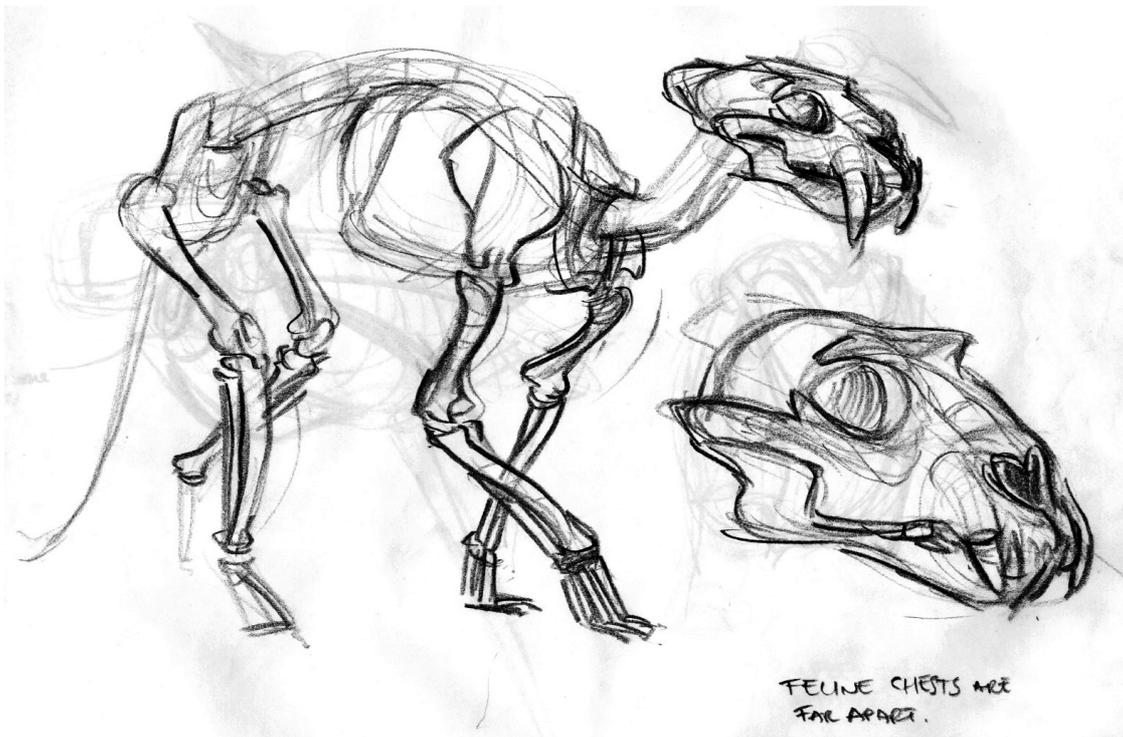


Figure 5.3: Drawing from Galerie de Paleiontologie, Gillian Reid 2013.

Testimonies are vulnerable because they can be false claims about their content but photographs cannot claim anything other than is the case. Unlike with testimonial evidence, we do not depend on the beliefs of an intermediary when viewing photographs. There is of course an intermediary when looking at things through photographs (namely, the camera) but it does not have beliefs. One might even want to say that we are looking through the photographer's eyes but strictly speaking, this is a simile, and photographs do not necessarily correlate with photographers' intentions. It is impressive when art photography succeeds in showing us something as if through the eyes of a photographer, but not all photography is this successful. Photographs need not have had photographers at all. Speed cameras for example, take snapshots of vehicles as triggered by their exceeding the legal speed limits and needn't be operated by a photographer. Regardless, the photographer's beliefs do not necessarily correspond with the content of his photographs –e.g., his doing LSD and forming the belief that there are fairies in his yard will not translate into the photograph he takes.

The belief relation is necessary for testimony and is thereby required of testimonial artefacts but while it is possible for photographic content to match photographers' beliefs, it is not a necessary correlation. Paintings and drawings on the other hand, are testimonial because if a painter were to paint a scene for you based on what he believes he sees, the depiction would be susceptible to the same sceptical issue as a testimony, that is, it would convey whatever beliefs he has about what he saw –e.g., if he thinks the car was brown because he is colour blind and did not see red, he will draw or describe it as brown. There are of course doubts one might raise about a photograph, such as whether its content is genuine or if the photograph is a counterfeit of some sort, but the belief state of the picture maker is not a concern.

Does it make sense to doubt the honesty of any of the claims this photograph might make in some sense? Let's consider other ways a photographer who wanted to pass along a falsehood could make the photograph convey something false. First, we might not accept that the photograph above is in fact of genuine animal skeletons in the museum but of something else entirely. Second, there is a pretty common concern with photographs that we have already mentioned: whether they have been doctored in some way to, for

example, make a false claim as it were. And thirdly, perhaps we have reason to doubt that it is a photograph to begin with and not a counterfeit of one. We will take these one by one in order.

Regarding the first worry: A photograph may be asserted to be something other than it is because of its resemblance to other things. The picture that is allegedly of animal skeletons in a museum in Paris may actually be miniature candy figures in a miniature museum setting in a shoebox in my flat in London. In other words, what the picture is actually of may differ from what the photographer asserts it to be.

Recall the famous “Surgeon’s Photograph” of the Loch Ness monster that was more or less discredited as a hoax since its appearance in 1934.



Figure 5.4: Surgeon’s photograph of the Loch Ness Monster, 1934.

This photograph was presented as evidence of the existence of Nessie, and as a photograph, it was convincing. Did this photograph offer false information? No. First of all, we would have the same relationship to the photographic content as we would have had if we first-handedly saw this scene: A stick protruding from the water that resembles Nessie, could be misread as Nessie under certain conditions if were pointed out *in situ*. Secondly, to believe this photograph is of the Loch Ness monster is a matter of relying on the proper *testimony* of the photographer or whoever has captioned it as Nessie. So this is not a testimonial by photograph. The photograph only presents what was there to see and indeed, that stick or elephant trunk did resemble Nessie. The testimony is in that one has

made a claim about what the photograph is of and so the picture was misrepresented or misread. Again, these are mistakes one could make seeing them first-hand.

Alternatively, suppose the events that are captured by the photograph were staged –e.g., an elaborate performance of people coordinating their movements in a Nessie-like suit emerging from Loch Ness. False beliefs would then be generated about the photographic content based on the fact that it shows something and that something was a deception. But false beliefs would be generated through first-hand seeing this very same staged scenario. Consider the false barn cases. So, as far as this worry is concerned, the problem is reducible to perceptual scepticism rather than that of testimony.

The next two worries are related and come from the fact that photographs can be modified. Now, there is a certain amount of modification to photographs that we might consider more or less acceptable, such as removing red-eye or lens flare but there are cases of photographs being modified to deceive its viewers. (The different classes of modifications were described in the last chapter.) The photograph from the National Museum of Natural History above may have been Photoshopped to look as though there were many kinds of skeletons, where in fact there was only one family of animals on display. How can we be sure that when we look at a photograph that it has not been modified to make a claim that is distinctly false?

Now one answer to this is that a photographic picture that has been doctored to make a false claim is entering the domain of handmade pictures. As argued in Chapter 4, modifications that are of the type that can represent hallucinations render a photograph opaque. Once a photograph has been modified to this extent it becomes a digital painting, by virtue of someone having employed digital techniques for creative enterprise, and creative enterprises require intentional states. Because the content depends on the picture maker, it is of course subject to the same sceptical hypothesis as other handmade pictures. But the important thing to take away is that this is no longer the photograph, but its counterfeit, and counterfeits only pretend to be photographs.

The question about whether the photograph is doctored or not remains open. Our doubt that what we are looking at is in fact a photograph is not out of the picture because we don't always know if the photograph is genuine. There is no simple answer to this

question. However, one's doubt about the genuineness of the photograph is not unlike one's scepticism about perception. From the standpoint of hallucinating or brains-in-vats, we cannot tell that perception has gone wrong or whether a deception of some scale has taken place, and that is the very basis for sceptical hypotheses about perception.

Photographs follow suit: if we knew the photograph to be genuine –that is, not manipulated to show false information or making claims about something being other than it is– then we would not have reason to doubt its content, but likewise, we cannot tell from looking at a photograph whether it is genuine or an artefact of deception. We can be misled about what we see in photographs or misread their content, but these mistakes are equivalent to those we make seeing first-hand. We might be deceived on a grand scale by photographs as well and doubt that we are looking at genuine articles, but this is precisely the kind of scepticism we face with perception.

§4.2 Possible objections

Here I will take a moment to pre-empt two possible responses to the account I've offered. I have already hinted at this problem in a previous section, but the first regards the possibility of a grand scale deception like that offered by Descartes but in which case, all of our beliefs are dependent on God's. The second possible objection is that there may be non-photographic pictures that are not belief dependent, making my distinction dubious. Let us take these in order.

1) What if everything is belief dependent? (The Malebranche problem.)

Malebranche thought God mediated our perception of the world with his own beliefs. In this case, we cannot talk about perception being belief independent because it depends on the beliefs of Malebranche's god. If this is a possibility, it seems to pose a problem for the belief dependence/independence condition that is the cornerstone for my claims about photographs. Without belief dependence distinguishing photographs from paintings, one cannot claim that photographs are transparent or epistemically distinct from handmade pictures.¹⁷⁴

¹⁷⁴ Discussed in Currie 1995, Gaut 2008 and Lopes 1996 regarding the transparency of photographs, for example.

It seems that the Malebranche-style hypothesis has the same range of the other sceptical hypotheses: it gives a plausible explanation for our experiences outside the realm of verification and challenges the credibility of perceptual learning. If there is a god that manipulates our thoughts according to his or her own beliefs, then we have cause to doubt the content. But does this mean we are committed to claiming perception is belief dependent? Not necessarily.

I will describe some strategies offered by Gaut (though he used these to prove a different point): The first is to admit that seeing can be belief dependent in such worlds as Malebranche's but that Malebranchians do not mean the same thing by 'see' as we do.¹⁷⁵ Our world does not build theories of seeing on God-mediated vision and the kind of seeing we talk about involves belief independence. Gaut's second suggestion is that we accept that we may be talking about the same thing as the Malebranchians but deny that God mediated beliefs are the kind that amounts to undermining the belief independence condition. The Malebranche God mediates vision in a way that preserves the important parts of the belief independence condition because God's beliefs always represent how things really are.¹⁷⁶ In a sense, I want to say, God doesn't even have beliefs, just knowledge straight-up.

In some sense, as with the evil demon, brain-in-vat and Matrix situations, perceptual experiences will be structured according to the beliefs of the deceiver. But, even if perception works in these ways, there would still be worries about what other people tell us, but not what gods do. We can still find testimony dubious or believable based on evaluation of the person testifying and depend differently on their beliefs. If Malebranche's god intervenes on our first-hand knowledge, it will carry over to the second-hand kind which means testimony will be dependent on the beliefs of a god, *and* also that of a person. Testimony itself, may be divine (in which case the worry might be placed on the beliefs and honesty of the god) but one might ask what epistemic standing divine testimony has based on whether there are beliefs involved at all.

¹⁷⁵ Gaut 2008: 385-386; 2010: 82-88.

¹⁷⁶ Gaut 2008; 2010: 82-88.

Yet, there is some sense in which we regard perceptual experience as primary. We learn from perceptual experiences at the most basic stages of our development. Babies come to grasp concepts by some combination of their senses and so on. That operation is the basis of knowledge henceforth. So, despite any debate regarding realism or anti-realism about perception, or whether we have immediate contact with reality versus access in virtue of representational content and so on, perceptions remain more basic than other sources of belief. The epistemic question underlying the undertaking of the philosophy of mind, measures the space between the world and our experience obtaining information: Perhaps it is a matter of degrees but even if Malebranche was right about the world, perception remains one degree closer than testimony.

But this is not unlike the sceptical hypotheses analysed in §2 in that, whatever problem it poses for perception will carry over into testimony. What this ultimately means is that human beliefs are not easily conveyed by perceptual experiences or by devices that provide perceptual knowledge. If that were the case though, then *ex hypothesi*, testimony about what one has seen, heard, etc. would be doubly questionable.

And finally, there is some sense in which the kinds of belief dependence we are discussing are different but all too often conflated. In Chapter 3, I made distinctions between kinds of belief dependence, including identification of belief dependence through theory relativity, because theories are based in part on beliefs, and also dependence on personal beliefs or beliefs formed from perceptual experiences. The ancients thought natural phenomena like magnifying ice sheets and reflections were divine designs and thus, we can gather that that is a kind of theory relativity too (and very Malebranchian indeed). However, the belief dependence that distinguishes perceptions from testimonies, and photographs from handmade pictures, is a different sort. This kind of belief dependence can be determined by the hallucination test I have mentioned in the previous chapters. And that test was also used to show how seeing in a Malebranchian world would not be belief dependent (in Chapter 1), because god would not fail the hallucination test.

Meanwhile, this chapter is ultimately about where photographs fit into the categories of evidence. The hypothesis for this chapter is that photographs are susceptible to epistemic problems met by perception rather than testimonial ones and thereby informative in a perceptual way. In the event we entertain the Malebranche cosmology, photographs will

not need to sidestep the problem but rather remain subject to the same sceptical conditions as perception.

2) What if handmade pictures aren't belief dependent either?

Perhaps the more problematic case is the inverted version, which has already been mentioned in Chapter 3, and can be found in Dominic Lopes's *Understanding Pictures*. Lopes holds that photographs are not dependent on beliefs, but it is not necessarily the case that all handmade pictures are belief dependent either. This is not to say that *no* drawings and paintings are belief dependent, but rather, it is not a necessary condition that handmade pictures counterfactually depend on the beliefs of their illustrators. This is because the mental process involved in drawing what one sees can often bypass the part of the brain that identifies concepts, and without concepts one cannot form a belief –that is to say, recognition engaged for drawing is independent of belief. Lopes's resulting theory stipulates broader conditions for the informational role of pictures.¹⁷⁷ If some handmade pictures can be belief independent, then what differentiates photographs from them? And thus, can handmade pictures offer perceptual knowledge too? If belief dependence is not a necessary feature of handmade pictures, then some handmade pictures can readily perform the same epistemic task that photographs perform.

I think that in practice this is true: we do trust some handmade pictures over others. For example, architectural blueprints are drafted to scale and use a variety of prefabricated symbols and shapes from stencils. Once upon a time, this was done by hand (sadly, now mostly in AutoCAD™) and these drawings were trusted to represent dimensions so accurately to the extent that the engineers often trusted those dimensions. But in the case of blueprints, the other condition of transparency, namely preservation of similarity, is moot. For one, it is a design of something that doesn't exist yet so can bear no resemblance to it. And it is after all, a kind of symbol-rich aerial map of what a building will look like.

But what about handmade pictures that are supposed to be realistic depictions of people, or places? To begin to answer this, it is important to remember that Walton's condition only picks out belief among other intentional states to illustrate an exemplary kind of

¹⁷⁷ Lopes 1996: Ch. 3; 184-85.

vulnerability. Beliefs are only one of several kinds of intentional states that may alter the perception of what is to be depicted.¹⁷⁸ As Gaut points out in his response to Lopes, one need not stop at beliefs: we should not only explain the belief independence condition more broadly to include independence from all intentional states, not just beliefs, but also independence from the visual experience of others.¹⁷⁹ This means that even if one can show that handmade pictures can be belief independent, they may still be dependent on other states that photographs are not and one thereby preserves the condition that the counterfactual link of photographs differs from that of handmade pictures.

What Walton rightfully points out is a certain kind of susceptibility to error is present in drawings, and this can be sourced to the illustrator's process of seeing.¹⁸⁰ Because cameras do not see, they do not have this susceptibility. But illustrators and painters need to see what they are attempting to depict (whether or not they recognize it) and they are susceptible to mis-perceiving objects. Colour-blind painters may represent poppies in brown, severely astigmatic illustrators may over-arch the horizon, and drug-experimenting artists might include objects that aren't there. So perceptual dependence is part of the difference between photographs and paintings, because photographs do not have that dependence and paintings do.

Now, Lopes claims that, "drawings might be described as perceiver-dependent pictures. But once what it is to perceive so as to draw has been distanced from having beliefs, the camera-perceiver distinction carries little weight. To perceive is to gather and convey information, much as a camera does."¹⁸¹

However, I would like to assert that the value of that "camera-perceiver distinction" can again be clarified by the hallucination test we have used in previous chapters. A hallucinating illustrator can draw what he believes he sees (even if this might only be considered a proto-belief) but a photographer cannot photograph his hallucination. Whatever mental state or proto-intention is engaged or has the potential for being engaged

¹⁷⁸ Walton 1984: 264, 276 fn. 22.

¹⁷⁹ Gaut 2008: 85-86.

¹⁸⁰ Walton 1984: 264.

¹⁸¹ Lopes 1996: 187.

when one perceives in order to draw, that is sufficiently distinct from what is involved in making photographs. Because handmade pictures are susceptible to representations of hallucinated content –even if this is not normally the case, even if one might not represent the content of one's hallucination in particular cases, and even if hallucinations aren't even beliefs– this marks its difference from photographic pictures.

I am aware that there is some mystery about how conceptual a hallucination is and although I am not equipped to answer this question, we can analyse some possibilities: if one is having a hallucinatory experience, is it possible for the belief-forming process to be bypassed? There is something intuitive about the claim that when one hallucinates, one does not form beliefs. However, if this kind of bypass is possible, the hallucinatory experience is still a mental and perceptual event, moreover, one that can be represented in handmade pictures. If it is not possible to bypass the belief-forming part of the brain when having a hallucination, then of course pictures made while hallucinating are belief-dependent anyway.

When photographs reflect the beliefs of photographers, they accomplish something rare and artistically significant. This is because the matching of content between the photographer's beliefs and the photograph, when they do manage to correlate, is a *de facto* correlation but not one operating from principle. When the content of a painting matches the belief of a painter, this is no surprise. But as I mentioned in Chapter 3, I do not hold that paintings and drawings can be belief-independent, because even if they could be produced with a conceptual bypass of sorts, they still require engagement of the perceptual states of others. Whether the perceptions are intentional states or proto-beliefs, the fact remains that handmade pictures, aconceptually drawn or not, are susceptible to representing hallucinated content.

§5 Epistemology of photography

Photographs and handmade pictures furnish visual information visually and yet, these kinds of pictures differ in epistemic value because of how photographs are to be categorized with perception and paintings with testimony. Now, don't we defer to external knowledge about the photograph to ascertain credibility like we do testimony? Yes, we do: there is a huge portion of viewing a photograph that involves second order knowledge

which is inclusive of the fact that it is a photograph and we believe photographs are in principle trustworthy sources of information. If one attends to the character of perceptual experiences though, one will find that there is second order knowledge of the fact that we are actually seeing and that seeing is in principle reliable. Photographs though, do retain the possibility of being forgeries, a possibility that has increased with the everyday use and manipulation of digital photography, but so does perception.

So, back to the big-picture questions about the epistemic value of photographs:

1) What kind of information does a photograph furnish?

Answer: visual information about objects, in virtue of a belief independent and similarity preserving counterfactual link.

2) What kind of knowledge do they provide?

Answer: Perceptual knowledge by virtue of being in visual contact with the objects photographed.

CONCLUSIONS



The Epistemic Province of Photographs

The questions of this thesis's chapters have been motivated in different ways by finding out what photographs do that is unique, in contrast to other kinds of pictures, particularly when it comes to knowledge had by photographs. Transparency was laid as the foundation for my theory, and used to reinforce the distinction between photographs and other pictures many times over. I described an equivalent test for determining whether something is transparent or not, called the hallucination test, to distinguish devices that are susceptible to representing hallucinations from those that are not, the latter being belief independent. First transparency was what set apart photographs from paintings, because of their belief independent and similarity preserving counterfactual link. Next, I replied to the current epistemology of photographs that claimed that photographs were not transparent, but were a spatially agnostic source of v-information. My suggestion was to accept that missing e-information is compatible with the transparency of photographs, because there is a way in which e-information would be at cross-purposes with photographic virtues. The technological dimension of photographs gives further explanation for the limits of photographic information as the design of instruments sets those limits for photographs. The problem of digital pictures challenges the epistemic value of photographs: in response I offered strategies that include comparing whether the digital problem of modification did not also apply to analogue photographs, and offered a suggestion for where to draw the line between benign forms of modification and the more deceptive variety. Last, I offered an exercise to see what sceptical hypotheses could be put to photographs and paintings. They were susceptible to different kinds, and that suggests that how we form beliefs by looking at photographs is different from handmade pictures. In sum, these chapters support my hypothesis that knowledge gained by looking at photographs is perceptual knowledge.

AFTERWORD



Implications for the Aesthetics of Photography

The chapters of this thesis have been dedicated to understanding the knowledge provided by photographs. Because the questions I focused on concerned the *epistemology* of photography, I did not discuss the aesthetics of photography in the core of this thesis. And yet, whether or not photographs can be artworks is a heavily discussed topic in the philosophy of photography, sometimes pitted against the epistemic value of photographs. The aesthetics of photography will therefore receive some attention here if for no other reason than to show how my theory can be coordinated with the aesthetics of photography.

As mentioned above, some attention has been paid to the difference between photographs and paintings in the previous chapters and consequently we can surmise that this has some effect on, in virtue of the ontologies of these respective media, what artistic possibilities photographs may lend themselves to. Different kinds of devices have limits attached to their kind that include the kinds of distortion and resemblance they have from reality, and the kinds of information they furnish. I will show that while the kinds of artistic opportunities with the respective media differ, this does not undermine the aesthetics of photography, but only differentiates photographs further from paintings.

§6.1 Scruton and critics

To illustrate this point, I will start with a more detailed account of an article that has already been mentioned briefly in various chapters of this thesis: the question of whether photographs can be artworks can be sourced to Roger Scruton's article, "Photography and Representation." There he argues that photographs are not representational art because they simply *present* objects for us to look at and consequently, photographs offer no room for aesthetic interest in them *qua photographs*. Thus whatever aesthetic interest the photograph has should be attributed to a quality in the object photographed. This is a controversial view that has garnered significant attention and offers a fruitful starting

point for this discussion, especially because his notion of presentation can be construed as equivalent to transparency. I will discuss his argument in more detail, and also discuss some of the responses to Scruton's thesis to show that whether one wants to adopt his view or not, my epistemology of photography is not beholden to his thesis.¹⁸²

Scruton believes that the *causal*, rather than *intentional* relation photographs have to their subjects, prohibits them from being artworks:

The ideal photograph also stands in a certain relation to a subject...[T]he relation is here causal and not intentional. In other words, if a photograph is a photograph of a subject, it follows that the subject exists, and if x is a photograph of a man, there is a particular man of whom x is the photograph... In characterizing the relation between the ideal photograph and its subject, one is characterizing not an intention but a causal process, and while there is, as a rule, an intentional act involved, this is not an essential part of the photographic relation.¹⁸³

This is because genuine representational artworks depend on intentional states in a way photographs cannot. Scruton bases this on the claim that the function of representational art is to express thoughts:

Now, it would be a simple matter to define "representation" so that "x represents y" is true only if x expresses a thought about y, or if x is designed to remind one of y, or whatever, in which case a relation that was merely causal (a relation that was not characterized in terms of any thought, intention, or other mental act) would never be sufficient for representation.¹⁸⁴

Scruton supports his analysis by contrasting *ideal paintings* with *ideal photographs*, describing the ideal painting to be one that stands in an intentional relation to the maker and thus conveys the thoughts of the painter. In other words, ideal paintings directly express the thoughts of their painters. To illustrate, this should be contrasted with non-ideal paintings, such as paintings generated by computers or made with paint-by-numbers kits, to name

¹⁸² Scruton 1981.

¹⁸³ Scruton 1981: 579.

¹⁸⁴ Ibid.

some examples. These do not make use of the virtues of the medium. Meanwhile, ideal photographs are meant to be documentary and their documentary capacity is tantamount to being intention-neutral. That is the photograph's virtue. This means that ideal photographs ought not express the thoughts of photographers if they are to align with their virtues. This in turn renders them inept at representing fictions.

Another feature of paintings is that they have other visible features in virtue of being handmade –e.g., brushstrokes, layers of paint, colour choices are among these– and which contribute to their aesthetic value, but photographs cannot be evaluated for such features. Photographs do not bear surface markings that are indicative of craftsmanship. Finally, the quality of a painting is determined by the mastery of the painter, and the control over details she has of the medium and such control of details is not available to photography.

Scruton's claim is obviously a very narrow view to begin with, but it is problematic for a variety of reasons, which allows me the opportunity to discuss a variety of avenues for artistic photography to be possible. We can also see why his account might be misconstrued as tantamount to transparency, as it is certainly compatible with transparency, and since I have here argued that photographs stand in causal relation to their depicta. But, I will show how the compatibility of Scruton's causal description with Walton's transparency description does not amount to the same thing for the aesthetics register. In the following sections, I will discuss the main criticisms of Scruton's view and later add some of my own.

§6.2 Control of medium

Scruton's last comparison above basically claims that one has more control over details in the medium of painting than in photography but clearly, this is a bone for contention. There are quite a number of details to attend to in photography as well, but they belong to a separate set of techniques from painting. In response to Scruton, William King argues that photographs have more aesthetic capacities than Scruton gives them credit for. First he points out that Scruton has ignored the diversity of photographic style and content. King also provides examples of the variety of general choices a photographer must make to produce a photograph, including the kind of paper, lighting, lenses and development techniques she might employ. The photographer makes a number of choices in choosing

what to photograph and how to do so. A good photographer will pay attention to tones, textures, colour and lighting and serious consideration of these features will in fact differentiate them from someone who took a drunken Polaroid picture. So, these allow many opportunities for artistic interaction with the photograph since these choices determine what gets displayed in the end and give the photographer creative leeway.¹⁸⁵

While there are limits to what photographs can do and they cannot do what paintings do, there are still many opportunities for art photography. One of these limits is that a photograph will not necessarily reflect the intentions of the photographer the way a painting does and this, in Scruton's view, suggests a merely causal link with the object photographed. But this doesn't mean there is a lack of artistic opportunities and the merely causal notion Scruton offers is itself problematic.

Dawn Phillips has paid overdue attention to the notion of causality in photography that is central to Scruton's scepticism about photography's aesthetic potential.¹⁸⁶ Since Scruton believes the major distinction between paintings and photographs is that paintings have an intentional link to their objects whereas photographs are causally linked to their objects, Phillips has investigated Scruton's notion of this causal link and argues that it is in fact not compatible with what a photograph is.

Upon further analysis of the notion of causality attributed to photography, Phillips points out that such a version would render talk of a photographic subject ridiculous. If the so-called subject of a photograph is what it is a photograph of, then the analogy to the content of paintings, which are intentionally linked to their subject matter, is a rather bad one. This is because on Scruton's account of the causal ancestry of photographs, the so-called subject has caused the photograph in the same way waves cause patterns in the sand. It would be silly to say that the waves are the subject of the sand patterns; rather, they simply contribute to generating whatever subject matter may arise from the patterns.¹⁸⁷ It then makes little sense to call the object that causes the photograph, the subject of it. Alternatively, one can hold that in fact photographs do not have subjects but in that case,

¹⁸⁵ King 1992.

¹⁸⁶ Phillips 2009.

¹⁸⁷ Phillips 2009: 330-331.

the comparison Scruton has made is null. Either way it cannot be as Scruton suggests, a *merely* causal link that is such that it precludes artistic possibilities.

§6.3 Fictional and expressive incompetence

Similarly, Robert Wicks points out that Scruton's expression claim, that is, that works of art express the thoughts of the artist, is based on one very narrow construal of representation which Wicks calls *fictive representation*. To put it simply, this kind of representation amounts to representation of fictional content but there are broader notions of representation out there.¹⁸⁸¹⁸⁹ According to Scruton, photographs that seem to represent fictional content –e.g., someone dressed as Don Quixote– just record a performance that has fictional content, and thereby cannot be credited with fictive representation.¹⁹⁰ Genuine candidates of representational art should be able to express thoughts in this way, so photographs are thereby not representational artworks. According to Wicks, all Scruton establishes is that photographs cannot create fictions about the things they are photographs of. However, this does not entail they cannot express thoughts. First Wicks argues that this is an inappropriate characterization because, for one, the fair comparison is between veridical paintings and photographs in which case strong fictive content is not what is at stake.¹⁹¹

Furthermore, Scruton's expression claim rests on that aforementioned analysis of the controllability of the medium. With photographs, allegedly, one cannot control the details in order to achieve one's purposes the way one can with paintings.¹⁹² But photographs, as already established above in King's comments, do have elements one can control to affect their outcome. While paintings have more opportunities for controlling the medium in a particular way, photography is a relatively young technology that may later prove to have just as many possibilities, as can be surmised by the opportunities already made available by photography's evolution into digital photography. Wicks proposes that one can control

¹⁸⁸ Wicks 1989: 4-5.

¹⁸⁹ See Ch. 3.

¹⁹⁰ Scruton 1981: 588-589.

¹⁹¹ Wicks 1989: 5.

¹⁹² Wicks 1989: 6.

the results in photography in an important and relevant sense, by what he calls artistic *masking* of the subject matter. That is to say, one can hide or enhance certain features of the subjects of photographs in a manner comparable to applying cosmetics to hide or enhance facial features, –e.g., one can make choices in lighting and exposure to blur out the texture of an object and make the surface appear smooth. Masking provides a sufficient opportunity for aesthetic and artistic expression through photography, and subsequently, redraws the character of fictive representation as simply that where some deviation from the natural presentation of the object is made.¹⁹³ Many such techniques are not *contra* transparency as well.

Gaut has also shown (though in a related defence of the aesthetic possibilities of film) how the expression condition of the equivalence thesis is problematic. For one, Scruton’s characterization of photographs lacking the capacity to express thoughts is based on what he stipulates to be an ideal photograph in contrast to ideal paintings. But just because Scruton’s ideal photograph does not express thoughts, one should not infer that photographs in general couldn’t do this. For even if the causal and mechanical connection between photographs and their subjects precludes their *necessarily conveying* the intentions of the photographer, it does not follow that they *necessarily fail* to express thoughts. Photographs do successfully relay those intentions and are subject to a wide range of other intentional involvement in their making.¹⁹⁴

There is also reason to doubt Scruton’s assumption that one cannot make fictions with photographs. Now it is not possible to get a camera to produce a photograph of nonveridical perceptual states: for example, if one hallucinates that one has seen a dwarf panda in their garden, taking a photograph will not show that dwarf panda. However, one can take extra steps to represent those states and find creative ways to engage with photographic media to represent fictions. Gaut discusses a number of ways to engage with digital photography and digital cinema to produce fictional representations, as we mentioned in the chapter on digital photographs.¹⁹⁵

¹⁹³ Wicks 1989: 8-9.

¹⁹⁴ Gaut 2002; 2010: Ch1.

¹⁹⁵ Gaut 2010: Ch1.

Furthermore, if one insists on making the photograph represent what one has not seen, one can even take steps to tweak the image with less sophisticated methods, some of which are not entirely “unphotographic.” Recall the paper by Atencia-Linares in chapter 4, where she argues that there are many techniques for representing fictions in photographs that do not contravene the photographic method. She gave the example of overlaying negatives of an image of a cat and an image of a woman, to create a cat woman photograph.¹⁹⁶ This illustrated one means by which one can convey fictions through a photograph, within the remit of the medium. Now for this case, the transparency of the final image is questionable: the resulting image is the product of a creative enterprise. The photographer has taken two photographic negatives and put them together strategically. This is not to say that the medium is no longer transparent, but that in this case, the picture presented to us after combining negatives is a product of the creative activities of the photographer. To engage in a creative activity to make a picture, even when the medium used is transparent (as is with the medium of photography), is not unlike hand-making a picture or collaging photographs. This is because a creative enterprise is an activity that requires active (and complex) intentional states and so, while the photographic pictures that are collaged into one image may themselves remain transparent, the resulting image that comes from the creative enterprise would not be. And as I have argued that the final image required creative enterprise, which does require engaging the intentions of the photographer, this method is vulnerable to representing his hallucinations as well. But the negatives preserve the merely causal relation Scruton described of photographs, and combined, are within the means of photographic techniques, so the fact remains that one can engage creatively with photographic pictures to create fictions.

§6.4 The defect thesis again

Scruton’s claim that photographs merely record reality has already been shown to have its problems but I will here mention that it is possible for photographs or cameras to be defective and for these defects to be put to artistic use.

¹⁹⁶ Atencia-Linares 2012.

It is important to note that there are normal conditions under which a photographic device has functioned properly, and under which it has not.¹⁹⁷ In Robert Hopkins's paper, "Factive Pictorial Experience" the photograph is described as being a pictorial document of something that has, by necessity, existed. A photograph of x entails that x existed. What makes a photograph different from a painting or drawing then, is its factive principle and this is why it is the ideal picture for documenting events visually. Now, there are a variety of ways a photograph can go wrong: it can be underexposed, the camera can get dropped too many times, the same film can be used twice, and so on. But regardless, Hopkins explains that under normal conditions, this factive principle obtains.

I have mentioned in previous chapters that a function of a device may go wrong, and under such conditions what results is a defect of sorts. Some defects are especially detrimental to the information that a device can provide and other defects can change the range of information for the better. A defective camera of some kind could produce images that are warped in some way, or brightly hued, or fantastically blurry. There is no reason why certain defects would not allow for a number of creative enterprises with photography. These defects may undermine the epistemic virtues of photography but they can still offer opportunities for the aesthetics.

§6.5 Documentary virtue and implications

Patrick Maynard brought several interesting facts about photography to attention in his book *The Engine of Visualization*. One of these facts was that photographs are technological artefacts that are especially good at offering visual information in special ways: they have a twofold allowance for simultaneously functioning for the purposes of detection and depiction. In other words, they can reproduce scenes for later observation (detection) and at the same offer a kind of representation of a scene (depiction).¹⁹⁸

Scruton believed photographs to have documentary virtue but that this precluded the depictive capacities of photographs: this special documentary virtue of photography

¹⁹⁷ Hopkins 2012.

¹⁹⁸ Maynard 1997.

prohibited them from being artworks because to be documentary is incompatible with being expressive.

Indeed, the fact that photographs are used for a number of different purposes that depend on their documentary virtue, which hinges on their transparency and not only on their aesthetic possibilities, sometimes makes it difficult to differentiate one type from the other. But one should not assume this makes documentary virtue incompatible with aesthetic virtue. In fact, there are a number of assumptions that we should do away with when it comes to photographs excelling at documenting reality. There are no principles that govern documentary photography that prohibit their being expressive in a variety of senses.

Gaut has targeted some of Scruton's claims that are meant to highlight this documentary virtue, namely, the test of *aesthetic transformation* which is supposed to establish whether something has representational capacities or not. On Scruton's view, the fact that paintings can undergo aesthetic transformation, – e.g., that the audience can look at a painting with horrifying content and find it graceful– but photographs cannot, is what sets them apart. The grim details of a crucifixion in a painting can generate, say, serenity, whereas with a photograph, the grotesqueness of a crucifixion will never translate into serenity. Since such a transformation is not possible, photographs are not representational artworks. However, Gaut contends that this is untrue. One can easily make choices in photographing a crucifixion that promote feelings of serenity in the audience. For example, the choice to frame the shot “from a great distance, set against a pure blue, tranquil sky,”¹⁹⁹ would achieve this effect.

Now, there were many ways to document the events in a journalistic capacity, which holds a principle of neutrality in high estimation (even if news often fails to accomplish this neutrality). When Ernest Hemingway was side-lining as a journalist, one of his assignments was to chronicle the events of the Spanish Civil War. His articles were published as solid examples of news, beholden to that aforementioned standard of neutrality, but he was also praised for his writing. The way he described the events, even keeping with the expectations of good journalism, was considered rather special and

¹⁹⁹ Gaut 2002: 305.

particularly literary. So there is room for a writer to be expressive because of that intentional relation they preserve, but what then about photojournalism? A few years ago, U.S. president Barack Obama was photographed just as he was given an unexpected bear hug by a voter. A number of photojournalists on site offered variations of this photograph to document the event, depending on their position in the room. The scene itself was indeed a special moment, so Scruton would credit that moment for the aesthetic interest of the photographs. However, not all angles and compositions of this shot were equally powerful. Compare the following:



Figure 6.1: Obama bear hug, angle 1.



Figure 6.2: Obama bear hug, angle two.

One does not get the same effect from the first photograph as from the second. There is some ambiguity in the first about how the parties feel and in the second, the moment is shown to be more jovial.

In Sherri Irvin's, "Artwork and Document in the Photography of Louise Lawler" she asks what differentiates a documentary photograph of x from an identical artistic photograph of x. That photographs have documentary virtue is not a controversial matter but because one can use photographs to provide information in a number of ways, they are further differentiated from paintings by the fact that their medium does not help to identify them as works of art. A painting made with oils on canvas will somewhat automatically belong to the artistic medium of painting because there are only rare instances of these materials being used for other purposes. But photographs are multifunctional, and not all instances of the medium of photography are automatically established as artworks without additional criteria. Irvin's paper gives an account of what constitutes the *artistic* medium of photography, using Louise Lawler's photographs as exemplary of photographs that are simultaneously documentary and artistic.²⁰⁰

Irvin offers a cluster account of art that takes on features of previous theories in order to present one that can apply to art photography. Thus, there are a number of different routes for a photograph to be a work of art, but no one condition is necessary for this to obtain, as per a cluster theory any combination of the conditions would suffice and not all need be met.²⁰¹ Photographs that belong to the artistic portion of the medium are taken to make artistic statements, as Irvin cites David Davies as saying. Similarly, the use of the photographic medium may realize some artistic values (or merely attempt to), per Gaut's theory of art.²⁰²

One way for a photograph to achieve this is to reflect some *positive aesthetic value* such as beauty or formal interest. Scruton acknowledges there is no reason why a documentary photograph couldn't achieve both formal interest and detail of information at the same

²⁰⁰ Irvin 2012.

²⁰¹ Ibid.

²⁰² Davies 2004; Gaut 2010: Ch. 1.

time.²⁰³ But not all art photography is art photography for this reason. Scruton, incidentally, could attribute the aesthetic value to the objects photographed in these cases. Another condition that Irvin highlights is whether the photograph has an *aptness for interpretation*. In many art forms, the spark of interest in interpreting the work is itself an indication that what one is dealing with is an artwork. This does not mean that interpretation defines which are artworks and which not, but rather, that engendered interpretation is the clue that what one is looking at is an artistic statement, that one might be engaging with an artwork, and so on.

A third condition is to be found in the intention of the photographer and his goal for it to be a work of art. For this she cites Jerrold Levinson's intention thesis, which holds that the definition of a work of art refers to what the artist intended. But this is not to be understood as the artist being fully immersed in and knowledgeable about the world of art. It is meant to describe a mental state that might have the most primitive idea of artwork.²⁰⁴ Where there might often be room for doubt as to the artist's intentions, or scenarios that obscure the matter, this condition would still suffice wherever this fact of the matter is available. Furthermore, what if an established artist loses the capacity for this mental state? Irvin gives the example of William Utermohlen who painted a number of works while suffering from Alzheimer's, thus perhaps making his later works devoid of artistic intention. Yet, this later work would be regarded as art nonetheless because of its belonging to a particular artistic history.²⁰⁵

In short, what makes a photograph an art photograph will depend on a separate set of criteria rather than a medium-based principle, and the avenues for artistry are not meagre. What makes for a non-artistic photograph can be a number of things, but it will not prove to be the fault of the medium.

²⁰³ Scruton 1981: 591.

²⁰⁴ Levinson 1979.

²⁰⁵ Irvin 2012.

§6.6 Transparency and aesthetics

Finally, even more rigorous accounts about the *merely* causal feature of photographs do not deny they have artistic possibilities. Dominic Lopes for example, has argued for the transparency of photographs and while this is a more demanding construal of the causal link photographs have to their objects, this is compatible with photographs having distinct artistic possibilities.²⁰⁶ This is because seeing an object first-hand and seeing it through a device are not identical, and this non-identity makes room for artistic possibilities.

Lopes lists a number of differences between seeing first-hand and seeing through a photograph: For one, a photograph fixes an image of an object which gives us more time to attend to its features and an opportunity to notice things we would've missed in seeing it first-hand. Similarly, photographs allow us to see objects that are not present and possibly, no longer exist, which one ordinarily could not achieve in first-hand seeing. And photographs not only remove objects from the time and place where they first met the camera, but also isolate the objects from their context, allowing attention to be placed squarely on them when they could be overlooked in their natural surroundings. Scruton has also overlooked the fact that the camera has a causal force of its own and can affect the way the objects in photographs appear, –e.g., the flash might startle birds into flight or make the onlookers' eyes widen with surprise. And finally, seeing through photographs (or other devices) will always include seeing features of the device one sees through as well: this means that looking at a photograph of a horse will amount to a visual experience that includes the photographic paper, the actual dimensionality of that paper, the sheen, etc. Information that is available in first-hand seeing will be lost in seeing through, –e.g., the size of the horse photographed is not identical with the horse's real size.²⁰⁷

In short, photographs provide opportunities for observing, evaluating and gathering information about objects that would be lost in first-hand seeing and some information is also lost that would be available in first-hand seeing. This non-identity of photographic seeing with first-hand seeing affords photographs ample opportunities to be aesthetically interesting, and presents a number of ways an artist can achieve artistic goals with a

²⁰⁶ Lopes 2003.

²⁰⁷ Lopes 2003: 442-443.

variety of photographic media.²⁰⁸ So, according to Lopes, even taking on the stronger thesis of transparency to explain the causal link between photographs and their objects still allows for artistic possibilities.

Since transparency is the foundation of my epistemology of photographs, Lopes's view gives a sufficient account of the aesthetics of photographs in light of my theory. However, Lopes hasn't offered an epistemology of photographs and also, he holds veridical handmade pictures to be transparent as well. So, I will need to explain some differences between my account and his, especially since my view is in a sense narrower, making it possible that the exclusions of my view also exclude the aesthetic possibilities his view has offered. Fortunately, this is not the case, so I will spell out how transparency and artistic photographs can coordinate and also, how aesthetics is preserved even in my narrower thesis.

My theory is as follows: that photographs give perceptual knowledge in virtue of being transparent. This means one sees object *x* through a photograph of *x* by virtue of a belief-independent and similarity preserving counterfactual link. One then obtains perceptual knowledge of *x* by virtue of this link. Like Lopes, I agree that this experience is not identical with seeing *x* first-hand and that this leaves room for a host of aesthetic possibilities. I also think, however, that being shown *x* first-hand has aesthetic possibilities, which I will describe later. I also think the non-identity of seeing *x* first-hand and seeing *x* through a photograph offers different information, but that this is nonessential information for seeing.

So, when one looks at a photograph one has a perceptual experience of the objects in the photograph and this can be either aesthetic or not, just like looking at paintings or looking at a particular landscape first hand can either be aesthetically pleasing or not. First hand experience of objects could also be either aesthetic or not. In Scruton's view, the aesthetic experience would only obtain in virtue of the qualities of the object photographed, but this is not the only way to have an aesthetic experience from seeing-through. As Lopes argues, one can get a separate set of experiences in addition to object-seeing because the experience is indirect: collapsing the object into two dimensions, distance (in time and

²⁰⁸ Ibid.

space) from the object, framing the object and so on, are but a few differences that offer opportunities for aesthetic experiences to come from the photograph and not the object photographed. In short, how it is photographed has potential for aesthetic experiences.

I agree that there are aesthetic opportunities in the non-identity between photographs and direct seeing. My theory does nothing to deny this crucial difference. In effect, the exclusions it makes do not cut from *this* side. My theory denies handmade pictures can be epistemically equivalent to photographs because, *contra* Lopes, even veridical *aconceptual* handmade pictures cannot be transparent. They cannot be transparent because they can be typified as a kind of device that is vulnerable to the hallucination test. They can be typified in this way because the image making process depends on what their maker has seen, even if the artist is a zombie, whereas cameras make photographs. Yet, this is compatible with photographs being transparent devices, belonging to a category of instruments that are also transparent, like microscopes and telescopes and which also offer indirect visual contact with objects. Thus, they all leave room for the aesthetic possibilities Lopes offered in his analysis of non-identity with first-hand seeing.

§6.7 Conclusions on the aesthetics of photography

Scruton's opponents seem to all agree that his expression platitude, and much of what qualifies it, is contentious. And since much of his argument rests on this platitude, his account is problematic: Gaut and Phillips pick out problematic premises in Scruton's view and show errors; Gaut, King and Wicks further give examples in favour of photograph's aesthetic capacities; and King, Lopes and Wicks basically share the claim that aesthetic interest in photographs is found in the non-identity of seeing through a device and seeing first-hand. They also share a similar strategy in that they offer a range of examples that undercut the claim that one lacks control of the medium, that show expression of thought is possible through various methods and that photographs do more than merely record reality.

While there might be some truth to the Arnheim-style position, that is, that art is found in deviating from a mere recording of reality, there was something to be said about the aesthetic possibilities of photography or other art form candidates that does not depend on

a deviance-style argument.²⁰⁹ Lopes, Irvin and I offer views that favour this route, to name some examples.²¹⁰ Despite the documentary virtue of photography, aesthetic avenues are still available to the medium for a variety of reasons including the simple fact that seeing through a photograph is not the same as first-hand seeing.

But so what if photographs were to merely record reality? One can imagine Scruton's example of framing particular scenes and marking an x on the sidewalk where one should stand to look through the frame as an elaborate conceptual art project.²¹¹ This project would be said to only present objects to be seen. This is what he considers merely an act of ostension that is equivalent to pointing out the scene with one's fingers or with a photograph, but in all cases it would be absurd to consider these instances of representation. Scruton's example is meant to establish the claim that using a camera "not to represent something but to point to it" as an example of representation would be the same as calling the act of pointing out a scene representational.²¹²

Perhaps he is right but whether one concedes this point or not, one can still take the position that photographs can be art by some other avenue. There is something about *showing* others what to look at that has its own artistic merits even if the medium is not strictly speaking a representational one. This method is used in performance and conceptual art for example. There is something that is certainly expressive about the project of framing a city scene to put it into a new perspective even if it is not a representation of that scene but looking at it directly. Despite lacking the rigid representational features Scruton expects, there are other ways to call a photograph an artistic object and he does not disagree with this.

So, perhaps one need not do anything to undermine the *representational* claim that Scruton is offering, and some relief should be afforded by pointing out what is really at stake: as Gaut and Wicks have pointed out, Scruton's thesis addresses the candidacy of photographs as *representational art*, but not that photography cannot count as any kind of

²⁰⁹ Arnheim 1957.

²¹⁰ Lopes 2003, Irvin 2012.

²¹¹ Scruton 1981: 596.

²¹² Scruton 1981: 589.

art. As we have already seen in Chapter 3, the term ‘representation’ varies in extension: in some theories it can include ‘merely causal’ devices (per van Fraassen) and can be carved up differently as well. However, in the end there is no real need to defend the place of photographs in that very narrow Scrutonian sense of representational art. The force of Scruton’s claim is in the possible implication that photographs cannot be any kind of art and that is the real cause for anxiety. Yet, if that is all that is at stake, we could happily carve out another kind of art form, and really, this would be a fitting practice for artistic endeavours since innovation with new media is precisely what artistic movements do. Photographs, among other things, could simply be *presentational* art in virtue of being able to present objects in interesting ways and some of these ways perhaps even expressing thoughts. This should be sufficient for undermining Scruton’s scepticism about the artistic and aesthetic capacities of photography since the part of his claim that has the most force is the too-narrow account of representational art that threatens the status of many forms of art. But if what is at stake turns out to be that photography is not included in but a sliver of what constitutes the art world, then really, what’s the matter with that?

To conclude, I will leave these questions with a general remark about what Scruton’s critics show – that one cannot analyse the aesthetic merits of photography against the paradigm of painting. And this is consistent with the efforts made in this thesis, as there has been no denial of the fact that photographs and paintings are vastly different media. They require different materials and techniques to be handled for a variety of purposes, some of which they share, and others in which they contrast. Furthermore, this thesis has shown that there are ontological and epistemic differences that distinguish them in kind, such that the individual mediums are subject to salient methods of manipulation, as well as variations in production and distortion potential. So, there is no surprise that their respective aesthetic opportunities also differ. And yet, those *differences* do nothing to establish which of these is better suited for producing artworks, any more than they render one picture epistemically superior to the other.

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