

BENCE NANAY

The History of Vision

ABSTRACT

One of the most influential ideas of twentieth-century art history and aesthetics is that vision has a history and it is the task of art history to trace how vision has changed. This claim has recently been attacked for both empirical and conceptual reasons. My aim is to argue for a new version of the history of vision claim: if visual attention has a history, then vision also has a history. And we have some reason to think that at least in certain contexts (namely, in the context of looking at pictures), visual attention does have a history.

I. INTRODUCTION

According to an influential view within art history, the way the ancient Greeks saw the world was importantly different from the way we now see the world, and part of what art history should study is exactly how human vision has changed in the course of history. If the ancients did see the world differently from the way we do now, then in order to understand and evaluate their art, we need to understand how they perceived it (and how this is related to the way they perceived the world). Thus, so the argument goes, the history of vision is a necessary precursor to art history. This general line of argument goes back at least as far as Tacitus, but it became one of the most important premises of art history and aesthetics from the early twentieth century.¹

The general idea that vision has a history, however, has been severely criticized recently, both for empirical and for conceptual reasons. The aim of this article is to defend a new version of the history of vision claim from these recent attacks. The upshot of my argument is that if visual attention has a history, then vision has a history, and we may have strong (but not necessarily conclusive) reasons to believe that visual attention has a history.

II. THE HISTORY OF VISION CLAIM

The general idea behind the history of vision claim is that visual experience changes in various ways in the course of history. We should, therefore, not assume that people in ancient or medieval times perceived in the same way as we do now. Further, one important aspect of understanding the art of earlier times is to understand the way people perceived artworks then.

The most explicit statement of this claim comes from Heinrich Wölfflin, in one of the best-known passages in the history of art history:

Vision itself has its history, and the revelation of these visual strata must be regarded as the primary task of art history.²

While Wölfflin's provocative statement has become an important slogan for generations of art historians, the general idea that vision has a history had another major, and in some ways even more influential, proponent in the context of the turn of the century German/Austrian art-historical tradition, namely, Alois Riegl. Riegl's main guiding principle in *The Late Roman Art Industry* was that the way people perceived the world in

ancient times is radically different from the way we perceive now. More precisely, he argues that ancient people saw only “individual self-contained shapes”—and this explains some crucial features of their representational visual art.³ But even within the ancient era, he hypothesizes that the Egyptians perceived the world differently from the way the Greeks did and the Greeks differently from the way the Romans, especially the late Romans, did.

Perhaps the real influence of the history of vision claim was provided by the application of this general and abstract idea to the question of modernity—an idea that is present in the work of a very diverse group of thinkers: Charles Baudelaire, Georg Simmel, Friedrich Nietzsche, László Moholy-Nagy, Siegfried Kracauer, and Lev Malevich, to mention just a few.⁴ But it was Walter Benjamin who made this application of the history of vision claim most explicitly and most influentially. Inspired by Riegl’s general claims about the history of vision,⁵ he says:

During long periods of history, the mode of human sense perception changes with humanity’s entire mode of existence. The manner in which human sense perception is organized, the medium in which it is accomplished, is determined not only by nature but by historical circumstances as well.⁶

Riegl’s influence is clear in these passages and especially in the ways in which Benjamin applies these general ideas to specific periods in art history: “The period of migration in which the late Roman art industry and the *Vienna Genesis* came into being, had not only a different art, but also a different perception from classical times.”⁷ Benjamin’s main interest, however, is not the late Roman art industry, but the change in art and perception that happened at the end of the nineteenth and the beginning of the twentieth century. And Benjamin’s claim is that modernity is a change in sensorium, and this idea has become one of the guiding principles of theorizing about modernity. For Benjamin, this change in sensorium was brought about by technological changes. Not just the changes in the streetscape around us: the speeding cars and the skyscrapers that Malevich and Baudelaire like to emphasize, but also the technological changes in art itself. As Régis Debray summarizes, “Photography has changed

our perception of space, and the cinema our perception of time (via montage).”⁸

Still, the application of the idea of the history of vision does not stop, and does not begin, with modernity. As Jonathan Crary argues at length, the general mode of perception may have undergone some important form of change already in the first half of the nineteenth century.⁹ And theorists of postmodernism rely on the principle of the history of vision as much as the theorists of modernity do. Fredric Jameson, for example, argues that postmodernism offers “a whole new Utopian realm of the senses.”¹⁰ The premise all these arguments share is that history, and art history, can be understood, at least partially, as the history of perception. This assumption is so deeply ingrained in much of the discourse on nineteenth- and twentieth-century art and culture and in (at least some branches of) art history and aesthetics that it has been taken for granted without further discussion.¹¹ As Whitney Davis summarized recently, “according to visual-culture studies, it is true *prima facie* that vision has a cultural history.”¹² Recently, however, this consensus seems to have broken down.

III. ARGUMENTS AGAINST THE HISTORY OF VISION

The two most influential recent arguments against the history of vision are based on psychology. The first one emphasizes that vision is modular: it is not sensitive to whatever else goes on in our mind. Most importantly, it is not sensitive to the beliefs we have.¹³ It is informationally encapsulated. A classic demonstration of this is the Müller-Lyer illusion: we know that the two lines are of the same length, but we cannot stop ourselves from seeing them as having different lengths. Arthur Danto argues that if vision is in fact modular, then it cannot be influenced by the higher order mental processes that do change with history. Our beliefs and knowledge do change with history, but given that vision is not sensitive to these beliefs and knowledge, our vision does not have a history.¹⁴ Danto adds that it is the *interpretation* of vision that changes, and the *interpretation* of vision may very well have a history, but vision itself does not and cannot change.

Danto also explores another line of argument against the history of vision claim, one that was originally introduced by David Bordwell.¹⁵ The

starting point of this argument is that vision is hardwired. The way our perceptual system functions is determined by evolution, not by cultural influences. Bordwell makes this argument with reference to the evolutionary implausibility of the history of vision claim. His line of thought is that if vision, something hardwired, were to have a history, this could only be explained as Lamarckian evolution—the culturally acquired changes in our vision would be transmitted to the next generation. But the main point of the Darwinian explanatory scheme of evolution is that acquired character traits are not inherited.¹⁶

These two arguments are not completely independent from one another. The claim about the hardwired nature of vision is often supplemented with the insistence that there are no top-down influences on our perceptual processes.¹⁷ And this, in turn, is intertwined with claims about the modularity of vision.

There are two ways of arguing against these recent objections to the history of vision claim. First, it could be pointed out that what Danto and Bordwell mean by vision is not what Benjamin, Jameson, Malevich, or Riegl mean by vision. What Danto and Bordwell mean is the physiological apparatus that is fixed by evolution and that may well be insensitive to our higher order mental processes. But what Benjamin, Jameson, Malevich, or Riegl mean is something much broader and less restrictive. So maybe the debate is really a terminological one. I will explore this way of resolving the history of vision debate in the next section.

Second, we can engage with the arguments of Danto and Bordwell on their own terms. Both Danto and Bordwell assume that vision is modular. But this is a highly controversial claim among vision scientists—and it was already very controversial at the time when Danto's paper was published.¹⁸ At some point in the 1980s, it did appear as if there were a (fragile) consensus among psychologists and vision scientists (and philosophers of mind) that perception is indeed modular, but this has become much more controversial since. We now have very clear evidence that top-down processes influence perceptual processing as early as the primary visual cortex.¹⁹ We also know that cross-modal influences between visual and auditory perception are rife.²⁰ These findings all militate against Danto's main premise: if we have no reason to believe that

vision is modular, Danto's argument simply fails to get off the ground.

Further, we also have strong reasons to doubt that vision is hardwired. Recent findings about the neural plasticity of the brain in general and of our perceptual processes in particular show that while much of the way our perceptual processes function is in fact determined by evolution, there is a lot of room for adjustments and changes that are part of our developmental processes.²¹ Also, recent work in philosophy of biology warns against drawing too sharp a line between innate and learned traits.²² Bordwell's argument only works if perception is entirely innate and if we can have some very clear way of keeping innate and learned processes apart. But it seems that neither of these premises is correct.

Can we then dismiss the arguments against the history of vision completely? We may be able to conclude that, as knock-down arguments against the history of vision claim, they fail. But they do need to be taken seriously inasmuch as they demonstrate the importance of making explicit what exactly changes from one historical era to the other. Danto and Bordwell are right in emphasizing that, for example, the retinal processing of visual stimuli is extremely unlikely to change in the course of history. The retinal processing of visual stimuli is, of course, only one part of the perceptual process; the question then is: what is it that changes if not the retinal image? What exactly is the history of vision the history of?

IV. ATTEMPTS AT A COMPROMISE

I have been focusing on the recent debate between the proponents and the opponents of the idea of the history of vision, and on the basis of the most important arguments in this debate it may seem that there are only two options: vision either has or does not have a history. But the debate in fact has more layers.

One could try to carve out an intermediary position between the two extreme views—by arguing that some aspects of vision do have a history while some others do not. Ernst Gombrich's *Art and Illusion* could be thought to be a monumental attempt at exactly this compromise. The overarching theme of the book is that we should not make inferences from the way pictures of a certain era represent to the way people of that era perceived.

This seems like the opposite of the history of vision claim. But Gombrich would also be unmoved by Danto- or Bordwell-style arguments, as he is very explicit that what we call ‘seeing’ is conditioned by habits and expectations—top-down effects.²³ As our habits and expectations can change from one historic era to the other, he could, in principle, be open to the claim that so can our seeing. But things are even more complicated. He makes a distinction between vision and schemata and insists that it is the schemata that changes in history, not vision.

There are other, structurally similar attempts at a compromise between the history of vision claim and its straight negation. David Bordwell himself aims to carve out such a compromise when he distinguishes vision and visual skills. Vision, for Bordwell, is constant and ahistorical, but visual skills do change. Visual skills do have a history. In fact, he argues that visual skills can even change within one and the same individual. His example is the visual skill of noticing jump cuts in films—something people were clearly unable to do in 1895 but were capable of in 1995. Tom Gunning makes a similar claim about the changes in our visual skills of watching films around 1908.²⁴

Michael Baxandall’s book *Painting and Experience in Fifteenth Century Italy*, which, on the face of it, could be taken to be one of the clearest illustrations of the history of vision claim, also turns out to be an example of this compromise position on closer inspection.²⁵ Baxandall does not say, as for example Riegl or Benjamin do, that the general “mode of vision” of people in fifteenth-century Italy was different from our general “mode of vision.” When they saw a tree, they may have had the very same retinal stimulation as we do. But people in fifteenth-century Italy had some very specific visual skills, employed when they looked at pictures, that we do not have. Again, the general “mode of vision” does not have a history, but the specific visual skills involved in looking at pictures does.

Baxandall’s concept of ‘period eye’ sums up this compromise nicely. He explicitly engages with the question of which aspects or stages of human vision are universal and which ones are not universal and, as a result, subject to variations throughout history. He takes the formation of the retinal image to be universal, but everything that comes after that can in principle be subject to historical variations.²⁶ Baxandall formulates this con-

trast in terms of raw data and the interpretation of this raw data (which is, oddly, very similar to Danto’s contrast). This choice of terms may be somewhat controversial, as it is somewhat problematic to take the primary visual cortex to be interpreting the retinal image, but what is important for our purposes is that Baxandall’s concept of ‘period eye’ could also be considered to be a compromise between the history of vision claim and the stance that at least some aspects of vision are universal.

Finally, another critic of the history of vision, Noël Carroll, also makes a distinction structurally similar to Bordwell’s between seeing and noticing and admits that what we notice changes in the course of history.²⁷ But what we see does not. I come back to this distinction in Section VI below.

V. CLARIFYING THE HISTORY OF VISION CLAIM

So far, I have taken the history of vision claim to be the following simple statement: vision has a history. But this seemingly simple statement is in fact ambiguous in at least two ways, and in order to even attempt to reconcile the ahistorical and the historical arguments, we need to do some disentangling.

The first question we need to ask is what is meant by vision, or, more generally, by perception, in this debate. What is it that is supposed to have a history? Sensory stimulation? The perceptual mechanism? If so, the mechanism of early vision or of late vision? Perceptual content? Perceptual phenomenology?

As we have seen, the retinal processing of stimuli is unlikely to change in the course of history—and it is a very far-fetched idea that this is what Riegl, Wölfflin, or Benjamin had in mind when they talked about the history of vision. If Danto’s, Bordwell’s, and Carroll’s claims are about the retinal processing of stimuli, then this debate is a clear case of the two camps talking past each other. The same is true of the interpretation of vision as the perceptual mechanism.

Is the debate about perceptual content—about what we see? Maybe. But the concept of perceptual content is itself very unclear. If it means just the object we see, then, again, the history of vision claim is unlikely to make much sense: when the ancient Egyptian looked at the Moon and when I look at the Moon, in some sense, we do see the

same thing: the object we see is the same. Is our perceptual content the same? That depends on how we cash out this technical notion introduced in, and seldom used outside of, contemporary analytic philosophy of mind.²⁸ If we allow for the way the object is perceived to be part of perceptual content, then we may have a more interesting claim: the ancient Egyptian may have perceived the Moon in a different way from the way I do. But much of this difference may be due to the last candidate for interpreting the history of vision claim: perceptual phenomenology.

Ultimately, I take the history of vision claim to be about perceptual phenomenology: about what it is like to see something—about our experiences. This is the interpretation Riegl, Wölfflin, and Benjamin were interested in, and this is the only interpretation that cannot be dismissed as either trivially false or ill formulated. But this interpretation also makes it difficult to settle the debate about the history of vision. Perceptual phenomenology is by definition only accessible to the person who has the experience. We cannot have direct access to someone else's perceptual experience, and we cannot have direct access to the perceptual experiences of people who lived centuries ago either. I propose a way to get past this obstacle in the next section.

The second ambiguity about the history of vision claim that is orthogonal to the first one is the following: when we talk about the history of vision, what is this vision the vision of? What is the scope of perception that is supposed to have history? All and any perception? Or the perception in a specific context? The second claim would clearly be much easier to swallow.

There is a disagreement within the history of vision camp about the scope of perception that is supposed to have a history. We can distinguish the following two claims:

- a. Perception in general changes from one historical era to the other.
- b. Perception in a certain specific context changes from one historical era to the other.

The original formulation of the history of vision claim by Riegl is a clear example for (a): according to Riegl, ancient people saw *everything* as “individual self-contained shapes.” Benjamin inherited this more radical version (a) from Riegl, and when he understands modernity as entailing a change

in sensorium, what he means by ‘sensorium’ is the very general mode of perceiving the world—streets, cars, buildings, everything. It is this stance that became dominant in more recent accounts of the history of vision, for example, in Crary or Jameson.

Heinrich Wölfflin, in contrast, very explicitly restricts the scope of his history of vision claim to the perception of artworks and mainly to the perception of pictures. The same is true of Baxandall's account of visual perception in fifteenth-century Italy and of Gunning's claims about the changes in our perception with the advent of the “cinema of attraction” around 1908. These accounts are versions of (b).²⁹

I argue that the best bet for the proponents of the history of vision claim is to opt for (b). But in order to do so, I need to appeal to an important concept that has been oddly ignored in aesthetics in general and in this debate in particular: visual attention.³⁰

VI. THE HISTORY OF VISUAL ATTENTION

We have seen that the most plausible formulation of the history of vision claim is about visual phenomenology: what changes in the course of history is what it feels like to perceive something. My argument for the history of vision proceeds in two steps:

1. Visual phenomenology depends systematically on visual attention.
2. Visual attention has a history.

The concept of visual attention does not seem to have played a significant role in the history of vision debate. One exception is André Malraux, who famously wrote that “the creation of every great art is inseparable from [the] metamorphosis in the manner of seeing, which does not properly belong in the realm of vision, but of attention.”³¹ In some ways, my account could be thought of as an elaboration of this sketchy idea Malraux mentions in passing. Our perception changes in the course of history because the allocation of our visual attention changes. If we want an argument for the history of vision, we need to look for evidence in favor of the history of attention.

The first premise of my argument is that visual phenomenology depends systematically on the allocation of one's attention. Attention, as the famous “inattentive blindness” phenomenon

shows, can dramatically change what we experience.³²

Probably the most famous inattentional blindness experiment is the following.³³ We are shown a short video clip of two teams of three, dressed in white and black, passing a ball around. We are asked to count how many times the white team passes the ball around. On first viewing, most of the observers come up with an answer to this not very interesting question. On second viewing, however, when there is no counting task to be completed, they notice that a man dressed in a gorilla costume walks right in the middle of the passing game, makes funny gestures, and then leaves. The gorilla spends nine seconds in the frame and most viewers are not aware of it when attending to the passing of the ball.³⁴

Recall Carroll's distinction between seeing and noticing.³⁵ He admits that what we notice changes in the course of history. But what we see does not. In the light of the inattentional blindness findings, this distinction seems odd. Seeing, in any meaningful sense of the term, presupposes noticing: what we notice, that is, what we are attending to, systematically influences our perceptual experience.

To sum up, what these empirical and everyday phenomena show is that attention can make a huge difference in what we experience.³⁶ In short, if we can show that visual attention has a history, we can conclude that vision has a history.

And we indeed have strong (although maybe not foolproof) reasons to take visual attention to have a history. I want to explore the possibility of arguing that our visual attention changed in an important respect in the course of the sixteenth century.

But first, some methodological worries need to be acknowledged. How can one argue that in a certain historic period in the past, people exercised their attention in such and such a manner? We could use the pictures they made as evidence, but this is always going to be partial evidence, as Gombrich repeatedly points out. But we can also use contemporary written evidence. I will use the combination of the two.

There are a number of ways of attending (overt/covert, endogenous/exogenous, focused/distributed, and so on).³⁷ The special way of attending I want to focus on is what I call, following Richard Wollheim, 'twofold attention.' The general suggestion is that sometimes we are simultaneously attending to both the picture

surface and the represented object.³⁸ We have a twofold experience in this sense.³⁹ As Richard Wollheim puts it, "The spectator is, and remains, visually aware not only of what is represented but also of the surface qualities of the representation."⁴⁰

We need to be careful here. On the one hand, Wollheim argues that twofoldness is a necessary condition for perceiving pictures, that is, any picture, regardless of its aesthetic value. On the other hand, he also talks about twofoldness as an important (maybe even necessary) feature of the aesthetic appreciation of pictorial masterpieces. These two ways of using the concept of twofoldness are clearly not the same, but Wollheim unfortunately uses them interchangeably. So some disambiguation is needed. I make a distinction between the concept of *pictorial* twofoldness and the concept of *appreciative* twofoldness. For Wollheim, it is pictorial twofoldness that is a necessary condition for perceiving pictures—any picture. And appreciative twofoldness is the one that is an important feature of the aesthetic appreciation of pictorial masterpieces.

Part of the confusion between these two ways of using the concept of twofoldness stems from the ambiguity in Wollheim's use of the concept of awareness when talking about twofoldness as simultaneous awareness of the picture surface and the depicted scene.⁴¹ If what is meant by awareness here is conscious attention (as Wollheim sometimes explicitly suggests), then it is extremely implausible that the resulting concept of twofoldness could serve as a necessary condition for perceiving pictures—we do not usually pay much conscious attention to the features of the picture surface when we leaf through a magazine or watch sitcoms on the plane.⁴² But we do, arguably, have such twofold attention (in the sense of appreciative twofoldness) when we are admiring masterpieces and of how certain brushstrokes contribute to the depicted scene. This is the sense of twofoldness, that is, appreciative twofoldness, that Wollheim uses when he makes claims such as "in Titian, in Vermeer, in Manet we are led to marvel endlessly at the way in which line or brushstroke or expanse of colour is exploited to render effects or establish analogies that can only be identified representationally."⁴³

The claim that is important from the purposes of this article is the appreciative twofoldness claim, which emphasizes the importance of twofold

attention. While not everyone agrees that twofold attention is a necessary feature of the aesthetic appreciation of pictures, it seems to be agreed on that twofold attention, or as Malcolm Budd put it, attending to “the *interrelationship* between the marks on the surface and what is depicted in them” is a “crucial characteristic of pictorial art.”⁴⁴ My topic here is not the explanatory relevance or importance of this concept but its history.

If I am looking at an apple and I am attending to its color and if I am looking at the same apple and I am attending to its shape, the phenomenal character of my experience will be different. In other words, what properties one is attending to makes a difference in one’s perceptual phenomenology. The problem is that it is difficult to see what evidence we could find that would show that visual attention has changed in the course of history. Some obviously faulty lines of reasoning need to be put aside. There were no traffic lights in the Middle Ages, so people then could not have attended to traffic lights. Now we do have traffic lights, and sometimes we are attending to them. This difference will not give us any reason to think that attention has a history in the relevant sense—if the scene in front of us is different, then it is obvious that our attention will work differently. This would not give us any meaningful version of the history of vision claim: if all that is meant by the history of vision claim is that we see traffic lights now, but we have not seen traffic lights in the Middle Ages, then the history of vision claim would hardly be something worth arguing about.

For us to be able to infer a change in perceptual phenomenology from a change in attention, we need to be able to point at two cases where the visual scene in front of us is the same, but our attention is exercised differently. The inattentive blindness experiments used the same contrast: the visual scene when watching the gorilla video is the same—we see the very same footage. But, because we are attending differently, our visual phenomenology is different.

Thus, in order to be able to argue that attention has changed in the course of history, we would need to be able to show that *the very same visual scene* was differently attended to in different historic periods.

This general explanatory scheme seems to be easier to apply in the case of the life history of one single person. Suppose that a year ago I did not know anything about trees, but then I took

an intensive course on botany. Now compare my visual experience of a pine tree a year ago and my visual experience of the very same pine tree (seen from the same angle, in the same lighting conditions) now. Given that I have familiarized myself with various features of pine trees, when I see the pine tree now, I am likely to attend to different features than the ones I attended to a year ago. I now attend to, say, the shape of the pine cones, the color of the foliage, the diversity of the ways the needles are bundled in fascicles, and so on. I did not attend to any of these features a year ago, as I did not know much about any of them: I was just looking at a tree without knowing much about the specifics of pine trees. Thus, I am attending to different things now, and, as a result, the argument goes, my perceptual phenomenology is also different. At least in my own life history, it seems that my attention (when it comes to pine trees) does have a history, and as a result, so does my vision.

The question is whether we can generalize the structure of the argument in this example to history per se (as opposed to one’s own personal history). And the answer is not at all straightforward. While we have strong reasons to suppose that I am now attending to features of the pine tree that I was not in the position to attend to in the past, we do not generally have any reason to suppose that there are features of an object that in some past periods people were not in the position to attend to—it is hard to see what evidence we could have that would show how people were attending to a certain kind of object in the Middle Ages, for example.

Here is a potential example that may at first seem tempting in this context. There was a time when people did not know that the Moon is a spherical object and the changes in its phases result from the way in which the Sun illuminates it. These people then were looking at the same object as the one we are looking at now, but they were not in the position to see, for example, the dark side of the Moon. So, the argument would go, we are attending to different features of the Moon (for example, the line between the shadow it casts upon itself and the sunlit parts) from the one these people in the distant past could possibly attend to. And, as a result, our perceptual phenomenology is different from theirs. I am skeptical that such an argument would be successful, as I am skeptical that this difference in attention is significant enough to bring about a difference in

perceptual phenomenology. One could argue that these people in the distant past could also attend to the same *visual* feature of the Moon (that is, the curved line between the visible and the invisible part of the Moon), but they referred to it, or conceptualized it, differently. So this difference is not really a difference in *visual* attention, but rather a difference in the way we conceptualize what we see (and attend to).

In short, I am skeptical of such a general way of arguing that the features of objects we attend to changed in the course of history (although I do not want to fully exclude this possibility). But I will argue that we may have more reasons to suppose that there was a change in what features of pictures we are attending to.

More precisely, we may have good reasons to suppose that attention, at least attention as exercised when looking at pictures, has a history. But then, as attention systematically influences perceptual phenomenology, so does vision. The more specific claim I want to explore is that twofold attention has a history. We can and do now attend to the relation between features of the picture surface and features of the depicted scene when looking at pictures. And often in order to appreciate a picture aesthetically, we need to exercise our attention this way. But there may have been periods when people did not attend this way.

We have clear evidence that people were capable of twofold attention by the middle of the sixteenth century, at least in Western Europe, which is the region I focus on from now on (more on whether I am entitled to do so below). A well-known example of this is the attention to bravura brushwork found in works by the later Titian and widely appreciated by his contemporaries. The appreciation of bravura brushwork is a form of appreciation that demands both attention to the thing represented and to the particular way in which a loose set of marks on the surface has been employed to bring about that representation.

But there are other examples from around the middle of the sixteenth century. A widespread and very popular subgenre of paintings in that century could only be fully appreciated by attending to both the picture surface and the depicted object. The best-known representative of this subgenre is Giuseppe Arcimboldo, whose portraits can only be appreciated by exercising twofold attention: in order to see the mastery of the execution, we need to be able to attend to the

very same specific marks on the surface as both depicting a fruit and as the design feature—we can, of course, see the depicted person in the painting (and also the depicted fruits) without twofold attention, but we could not appreciate the mastery of the execution of it depicting both (and depicting one by depicting the other). Without being able to identify the very same surface feature as responsible for both, we could not appreciate this genre of paintings. Although Arcimboldo is the best-known representative of this way of composing pictures, the so-called ‘anthropomorphic landscapes’ were widespread from the second half of the sixteenth century, especially in the Low Countries.⁴⁵ In these paintings, we see the marks on the surface in two ways: both as depicting various elements of the landscape—cows, walls, shrubbery—and as depicting parts of a human face—eyes, nose, beard. To do so, we need to attend to the features of the picture surface and to the features of the depicted objects (that is, the depicted cows and the depicted eyes) simultaneously. It is important that the simultaneity in question is not the simultaneity of seeing the marks as a face and seeing the marks as a landscape. We can, and often do, flip back and forth between these two ways of seeing the painting (as we flip back and forth when we are looking at the duck–rabbit drawing). The point is that we would not be able to appreciate the mastery of the execution of these paintings (for example, why the small cow in the background is placed where it is placed) without attending to the relation between the features of the surface and the features of the *two* depicted scenes. Appreciation here presupposes twofold attention.

But these “anthropomorphic landscapes” are not the only indication of the capacity of sixteenth-century people to exercise twofold attention. Wölfflin spends quite some time describing the importance of the relation between the surface features and the depicted scene when seeing and appreciating some sixteenth-century paintings. One of his examples is Leonardo’s *Last Supper*, where the alternating black and white of the receding side walls serves as a way of grouping the characters in the foreground.⁴⁶ Here, a formal element of the surface (provided by the depicted side walls) is essential for the pictorial organization of the apostles in the foreground. The appreciation of these features presupposes the exercise of twofold attention, which makes it possible to

see the surface feature of the alternating black and white of the receding side walls as interacting with the depicted scene's three-dimensional pictorial organization.

A last example: in Rafael's *The Expulsion of Heliodorus*, as Richard Wollheim (following, again, Wölfflin) points out, the fall of Heliodorus on the right is counterbalanced by the boys climbing up a column on the left. And to make things even more complex, it is this interaction between the upward movement in the left and downward movement on the right that draws our attention to the middle of the composition, to the praying high priest in the background.⁴⁷ Here, we need to have twofold attention to both the surface and the depicted scene in order to be able to appreciate the ways in which the two interact to guide our attention to the middle of the picture.

In short, people in the middle of the sixteenth century were already capable of twofold attention. But were people in earlier times, importantly, in the centuries immediately preceding the sixteenth century, incapable of it?⁴⁸ This claim is obviously difficult to establish and it is important to note that it would be a methodological mistake to appeal exclusively to the way pictures depicted their objects in that period. While it may be true that the appreciation of fourteenth-century pictures does not necessarily require twofold attention (the way some post-sixteenth-century paintings do) and it may even be true that the appreciation of these pictures requires that the viewer *ignore* the way the picture surface is organized. But we cannot infer facts about vision from facts about pictorial representations—something Gombrich likes to emphasize.⁴⁹

One preliminary consideration comes from the relatively sudden emergence of artworks that actively rely on twofold attention in the middle of the sixteenth century. In, say, 1560, many different pictures of different genre and kind were explicitly made in a way that they could only be aesthetically appreciated with the help of twofold attention. But a couple of decades before that this was true of no pictures. This sudden onset of pictures that presuppose twofold attention and the fact that very different kinds of pictures that rely on twofold attention emerged about the same time point to a sudden change in the way people exercised their attention. But, as I emphasized, this is at best a suggestive piece of data, not a real argument.

But here is a real argument. Alberti's *De Pictura* contains a lengthy analysis of *compositio*: what we would now call pictorial organization.⁵⁰ The *compositio* of pictures, according to Alberti, consists of organizing planes to members, members to bodies, bodies to pictures (or to *historia*). This organization of elements into higher units has its rules: for example, according to Alberti, at most nine elements should be organized into the higher unit, there should be a certain degree of variety between the elements, and so on. Michael Baxandall compared Alberti's concept of pictorial *compositio* to the humanist concept of *compositio* in rhetoric (that Alberti, like any educated quattrocento Italian, would have been very much aware of): organizing words into phrases, phrases into clauses, clauses into sentences.⁵¹

What is interesting for our purposes is that pictorial *compositio* in Alberti's sense is entirely a matter of the depicted scene. The basic unit of pictorial *compositio* is the plane: the surface of depicted objects. Not the pigment, that is, the mark on the surface, but something that is depicted. Thus, the equivalent of words, which serves as the basic units of rhetorical *compositio* is, in the case of pictorial *compositio*, part of the depicted scene. For Alberti, in other words, pictorial *compositio* is fully in the domain of what is depicted—the picture surface seems to play no essential role in pictorial *compositio*. That is, for Alberti, pictorial organization does not require anything akin to twofold attention—it is exclusively a matter of the depicted scene. Attention to the surface is entirely missing.

A further consideration in favor of the claim that we have no evidence that before the sixteenth century Western observers exercised twofold attention when looking at pictures comes from Michael Baxandall, who analyzes at length the various visual skills that fifteenth-century Italian (educated) observers exercised when looking at paintings.⁵² Not one of these visual skills concerns the surface of the painting. In short, we have no reason to suppose that the fifteenth-century Italian (educated) observers attended to the properties of the picture surface. But then they did not exercise twofold attention either, as this would presuppose attending to the surface (as well as to the depicted scene).

One may object that (*pace* Baxandall) fifteenth-century Italian (educated) observers did attend

to at least some features of the surface, namely, what it is made of: they did attend to the quantity and quality of ultramarine and gold used on the picture, and this is not a feature of the depicted scene, but of the picture surface. While this is undeniable, note that attending to these features of the surface is not in the position to give rise to twofold attention as I defined this term above. Remember that twofold attention means attending to the relation between scene and surface. But attending to the quality and quantity of the ultramarine is not attention to the design features of the surface that are responsible for depicting the represented scene.⁵³ The quality and quantity of ultramarine is like the cracks in the paint in this respect. The awareness of the quality and quantity of ultramarine, like the cracks in the paint, does not contribute to our awareness of the depicted scene. Thus, attending to them may be an instance of surface attention, but it will not be an instance of twofold attention—they do not count as counterexamples.

These considerations may demonstrate that we do not have any evidence that fifteenth-century Italians did not exercise twofold attention. But of course the absence of evidence is not an evidence of absence: I did not give any positive evidence for the claim that fifteenth-century Italians did not attend this way. The following argument is supposed to take us a step closer to this positive claim.

One striking aspect of pre-sixteenth-century paintings is the enormous effort painters made in order to avoid occlusion.⁵⁴ If they depict, say, twelve people in one picture, it happens very rarely that any of these twelve is depicted even partially occluded (one exception is the representation of nondescript crowds, where occlusion is used). And if a table is depicted with lots of food items and utensils and tools on it, each of the tools and utensils and food items is fully in view: not behind or in front of some other object. This changes quickly in the sixteenth century (especially quickly in the genre of food-related still lifes), when occlusion was not avoided at all. This avoidance of occlusion is remarkably systematic and a very salient feature of pre-sixteenth-century pictures (and, curiously, also of pictures made by children under five).

Now the argument is the following. Suppose, for reductio, that people in the fifteenth century did exercise twofold attention: they attended to the

features of the surface and of the depicted scene at the same time: they attended to the relation between surface features and scene features. If they really did so, they would have experienced these pictures as depicting extremely unlikely scenes: ones that are arranged in a special way such that no one occludes anyone else. As this almost never happens in real life and given the amount of technical skill geared toward the avoidance of occlusion, experiencing the depicted scene as very unlikely seems to be a very salient feature of the way these fifteenth-century observers experienced pictures. But as we have no reason to suppose that the unlikely nature of the scene was ever part of the fifteenth-century experience of pictures, let alone a salient part thereof, we have reason to deny the supposition for reductio—that people in the fifteenth century exercised twofold attention.

We can now (tentatively) conclude that while people in Western Europe exercised twofold attention when looking at pictures in the second half of the sixteenth century, we have no evidence that they did so a century earlier. Attention, at least attention exercised in the case of looking at pictures, seems to have changed significantly sometime in the sixteenth century. Attention does have a history.

It is important to clarify the scope of this claim. Whose attention is it that is at stake here? I was exclusively talking about (educated) observers mainly in Italy—should we restrict my claim to that group? So is it the case that my argument really only supports a much more qualified claim, namely, that the attention of Italian humanist observers has a history? I do not think so. While the evidence for the exercise of twofold attention in the sixteenth century may be limited to a smallish part of the world—to Western Europe—it is important to note that this is supposed to serve as an illustration. Because we have a relatively rich body of sources about the ways in which people were thinking about pictures in the fifteenth and sixteenth centuries from Western Europe, we can localize this potential emergence of twofold attention relatively accurately. In the case of other parts of the world, we do not have sufficient sources to make similar claims. But it would be an interesting and important research project to establish when a similar transition took place (if it did) in the case of non-Western observers.

Further, it is important to note the difference between this proposal and Marx Wartofsky's, according to which the "dimensionality" of space perception changed some time in the fifteenth century as a result of the invention of perspective.⁵⁵ Following the distinction between two different history of vision claims with very different scope I made in Section V, we can say that Wartofsky's proposal is an example of the history of vision claim (a), where the sensorium in general changes—according to Wartofsky—because of the innovation in depictive techniques, whereas my proposal is an example of the history of vision claim (b), where I only argue that the attention to (and, as a result, perceptual phenomenology of seeing) pictures changed. Also, the change Wartofsky talks about was supposed to take place about a hundred years before the change I am focusing on.

A final clarification, still on the scope of my claim: I argued that we have no evidence that educated Italians in the fifteenth century exercised twofold attention when looking at pictures. It is important to emphasize that this claim does not imply that they were incapable of doing so. Presumably, they were. And some of them, namely, the artists themselves, did have to pay attention to the features of the picture surface when they were making marks on them that were supposed to give rise to the visual experience of the depicted scene. Artists of all ages, arguably, have to exercise twofold attention in order to be able to make marks on the surface that are seen as depictions of three dimensional scenes. But my claim excludes the artists (at least artists at the moment of depicting something). My claim is that we have no evidence that those people (in the fifteenth century) who were looking at pictures were encouraged or required to attend in a twofold manner.

It may seem odd that I said nothing about what may or may not have triggered this change in the way we are looking at pictures. And I do want to remain neutral about this here. One possibility, explored at length by Whitney Davis, is that it is the exposure of different kinds of images that changes our way of looking at images (and, in the light of my proposal, changes our way of attending to them), resulting in a cyclical/dynamic process.⁵⁶ While this proposal is consistent with my argument here, my argument does not presuppose this way of looking at the history of vision claim.

I need to emphasize that this change in the history of visual attention has a very limited scope: it only applies to visual attention exercised in the case of seeing pictures. As a result, the conclusion for the history of vision debate will also have a similarly limited scope. Our general "mode of vision" (in the sense of Riegl or Benjamin) may or may not have a history. But our perception of pictures does have a history. As our practice of allocating visual attention when looking at pictures changed in the sixteenth century and as visual phenomenology systematically depends on visual attention, we can conclude that our visual experience of looking at pictures changed in the sixteenth century. This is a modest version of the history of vision claim, but hopefully one that can bring the two sides of the history of vision debate closer to one another.⁵⁷

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1. See Tacitus, *Dialogus de oratoribus*, Book I (10).
2. Heinrich Wölfflin, *Principles of Art History: The Problem of the Development of Style in Later Art*, 7th edition [1932], trans. M. D. Hottinger (New York: Dover, 1950), p. 11.
3. Alois Riegl, *Late Roman Art Industry*, trans. Rolf Winkes (Rome: Giorgio Bretschneider, 1985), p. 232.
4. See David Frisby, *Fragments of Modernity: Theories of Modernity in the Work of Simmel, Kracauer, and Benjamin* (MIT Press, 1986) for a good summary.
5. On the intricate ways in which Benjamin is influenced by Riegl in this respect, see Thomas Y. Levin, "Walter Benjamin and the Theory of Art History," *October* 47 (1988): 77–83; and Karen Lang, *Chaos and Cosmos* (Cornell University Press, 2006), esp. pp. 136–178.
6. Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," in *Illuminations: Essays and Reflections*, ed. Hannah Arendt and trans. Harry Zohn (New York: Schocken, 1969), pp. 217–251, at p. 89.
7. Benjamin, "The Work of Art in the Age of Mechanical Reproduction," p. 89.
8. Régis Debray, *Vie et mort de l'image* (Paris: Gallimard, 1992), p. 178.
9. Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (MIT Press, 1992).

10. Fredric Jameson, *Postmodernism, or, The Cultural Logic of Late Capitalism* (Duke University Press, 1991), p. 7.
11. One important exception is Marx W. Wartofsky, who gave a number of different arguments in the course of his career for the history of vision claim. See, for example, Marx W. Wartofsky, "The Paradox of Painting: Pictorial Representation and the Dimensionality of Visual Space," *Social Research* 51 (1984): 863–884, at p. 865; Marx W. Wartofsky, "Sight, Symbol, and Society: Towards a History of Visual Perception," *Philosophical Exchange* 3 (1981): 23–38; and Marx W. Wartofsky, "Perception, Representation and the Forms of Action: Towards a Historical Epistemology," in *Models: Representation and the Scientific Understanding* (Boston: D. Reidel, 1979), pp. 188–210.
12. Whitney Davis: *A General Theory of Visual Culture* (Princeton University Press, 2011), p. 7.
13. See, for example, Jerry Fodor, *The Modularity of Mind: An Essay on Faculty Psychology* (MIT Press, 1983); and David Marr, *Vision: A Computational Investigation into the Human Representation and Processing of Visual Information* (San Francisco: W. H. Freeman, 1982).
14. Arthur Danto, "Seeing and Showing," *The Journal of Aesthetics and Art Criticism* 59 (2001): 1–9; Arthur Danto: "The Pigeon within Us All: A Reply to Three Critics," *The Journal of Aesthetics and Art Criticism* 59 (2001): 39–44. See also, Whitney Davis, "When Pictures Are Present: Arthur Danto and the Historicity of the Eye," *The Journal of Aesthetics and Art Criticism* 59 (2001): 29–38; Mark Rollins, "The Invisible Content of Visual Art," *The Journal of Aesthetics and Art Criticism* 59 (2001): 19–27; and Thomas Sturm, "Historical Epistemology or the History of Epistemology?" *Erkenntnis* 75 (2011): 303–324.
15. David Bordwell, *On the History of Film Style* (Harvard University Press, 1997), pp. 141–149.
16. Bordwell, *On the History of Film Style*, p. 142.
17. Bordwell, *On the History of Film Style*, p. 301, n. 92.
18. See, for example, Patricia S. Churchland, V. S. Ramachandran, and Terrance J. Sejnowski, "A Critique of Pure Vision," in *Large-Scale Neuronal Theories of the Brain*, eds. Christof Koch and Joel L. Davis (MIT Press, 1994), pp. 23–60.
19. Sunil P. Gandhi et al., "Spatial Attention Affects Brain Activity in Human Primary Visual Cortex," *Proceedings of the National Academy of Sciences* 96 (1999): 3314–3319.
20. See, for example, Charles Spence and Jon Driver eds., *Crossmodal Space and Crossmodal Attention* (Oxford University Press, 2004); and Casey O'Callaghan, "Seeing What You Hear: Cross-Modal Illusions and Perception," *Philosophical Issues* 18 (2008): 316–338.
21. See, for example, Peter R. Huttenlocher, *Neural Plasticity: The Effects of Environment on the Development of the Cerebral Cortex* (Harvard University Press, 2002).
22. P. Griffiths and R. Gray, "Developmental Systems and Evolutionary Explanation," *Journal of Philosophy* 91 (1994): 277–304.
23. Ernst Gombrich, *Art and Illusion: A Study in the Psychology of Pictorial Representation* (Princeton University Press, 1969), p. 89.
24. Tom Gunning, "The Cinema of Attractions: Early Film, Its Spectator and the Avant-Garde," *Wide Angle* 8 (1986): 63–70.
25. Michael Baxandall: *Painting and Experience in Fifteenth Century Italy: A Primer in the Social History of Pictorial Style* (Oxford University Press, 1972). See also Michael Baxandall, *Giotto and the Orators: Humanist Observers of Painting in Italy and the Discovery of Pictorial Composition 1350–1450* (Oxford: Clarendon, 1971) for similar claims.
26. Baxandall, *Giotto and the Orators*, p. 29.
27. Noël Carroll, "Modernity and the Plasticity of Perception," *The Journal of Aesthetics and Art Criticism* 59 (2001): 11–17, at p. 15.
28. See, for example, Tim Crane, ed., *The Contents of Experience: Essays on Perception* (Cambridge University Press, 1992); and Bence Nanay, "Perceptual Content/Perceptual Representation," in *The Oxford Handbook of the Philosophy of Perception*, ed. Mohan Matthen (Oxford University Press, 2015).
29. Whitney Davis's account of the history of vision in *A General Theory of Visual Culture* should also be considered to be a version of (b)—although importantly different from the versions mentioned above; see especially pp. 8–10. See also Whitney Davis, "Succession and Recursion in Heinrich Wölfflin's *Principles of Art History*," *The Journal of Aesthetics and Art Criticism* 73 (2015): 157–164.
30. The concept of attention has received a revived interest in Michael Baxandall's later work; see, for example, Michael Baxandall, "Piero della Francesca's *The Resurrection of Christ*," in *Words for Pictures: Seven Papers on Renaissance Art and Criticism* (Yale University Press, 2003), pp. 117–164; Michael Baxandall, "Fixation and Distraction: The Nail in Braque's Violin and Pitcher (1910)," in *Sight and Insight: Essays on Art and Culture in Honour of E.H. Gombrich at 85*, ed. John Onians (London: Phaidon, 1994), pp. 399–415. See also Mark Rollins, "What Manet Meant: Intention and Attention in Understanding Art," *The Journal of Aesthetics and Art Criticism* 62 (2004): 175–188. Bence Nanay, *Aesthetics as Philosophy of Perception* (Oxford University Press, forthcoming) argues for the importance of the concept of attention in aesthetics.
31. André Malraux, *Museum without Walls* (New York: Doubleday, 1967), p. 206.
32. Daniel J. Simons and Christopher F. Chabris, "Gorillas in Our Midst: Sustained Inattentional Blindness for Dynamic Events," *Perception* 28 (1999): 1059–1074; Arien Mack and Irvin Rock, *Inattentional Blindness* (MIT Press, 1998).
33. Simons and Chabris, "Gorillas in Our Midst."
34. The philosophical implications of inattentional blindness are far from clear. See Jeremy M. Wolfe, "Inattentional Amnesia," in *Fleeting Memories: Cognition of Brief Visual Stimuli*, ed. Veronika Coltheart (MIT Press, 1999), pp. 71–94; and Jesse J. Prinz, "When Is Perception Conscious?" in *Perceiving the World*, ed. Bence Nanay (Oxford University Press, 2010), pp. 310–332.
35. Carroll, "Modernity and the Plasticity of Perception," p. 15.
36. See Christopher S. Hill, *Sensations: A Defense of Type Materialism* (Cambridge University Press, 1991), pp. 123–126; and Ned Block, "On a Confusion about a Function of Consciousness," *Behavioral and Brain Sciences* 18 (1995): 227–247, esp. p. 231.
37. See, for example, M. I. Posner, J. A. Walker, F. J. Friedrich, and R. D. Rafal, "Effects of Parietal Injury on Covert Orienting of Attention," *Journal of Neuroscience* 4

(1984): 1863–1874; Michael I. Posner, “Current Research in the Study of Selective Attention,” in *Cognitive Psychophysiology: Event-Related Potentials and the Study of Cognition*, ed. Emanuel Donchin (Hillsdale, NJ: Erlbaum, 1984), pp. 37–50; Michael I. Posner, “Orienting of Attention,” *Quarterly Journal of Experimental Psychology* 32 (1980): 3–25; Eileen K. Kowler, Eric Anderson, Barbara Doshier, and Erik Blaser, “The Role of Attention in the Programming of Saccades,” *Vision Research* 35 (1995): 1897–1916; James E. Hoffman and Baskaran Subramaniam, “The Role of Visual Attention in Saccadic Eye Movements,” *Perception and Psychophysics* 57 (1995): 787–795.

38. Richard Wollheim, “Seeing-as, Seeing-in, and Pictorial Representation,” in *Art and Its Objects*, 2nd edition (Cambridge University Press, 1980), pp. 205–226; Richard Wollheim, *Painting as an Art* (Princeton University Press, 1987); Richard Wollheim, “On Pictorial Representation,” *The Journal of Aesthetics and Art Criticism* 56 (1998): 217–226; Bence Nanay, “Taking Twofoldness Seriously: Walton on Imagination and Depiction,” *The Journal of Aesthetics and Art Criticism* 62 (2004): 285–289; Bence Nanay, “Is Twofoldness Necessary for Representational Seeing?” *British Journal of Aesthetics* 45 (2005): 248–257; Bence Nanay, “Perceiving Pictures,” *Phenomenology and the Cognitive Sciences* 10 (2011): 461–480; see also Dominic McIver Lopes, *Understanding Pictures* (Oxford University Press, 1996); and Dominic McIver Lopes, *Sight and Sensibility: Evaluating Pictures* (Oxford University Press, 2005).

39. A recently popular way of putting this is to say that our experience of the picture is inflected; see Michael Podro, “Depiction and the Golden Calf,” in *Visual Theory: Painting & Interpretation*, ed. Norman Bryson, Michael Ann Holly, and Keith Moxey (New York: HarperCollins, 1991), pp. 163–189; Michael Podro, *Depiction* (Yale University Press, 1998); Lopes, *Sight and Sensibility*; Robert Hopkins, “Inflected Pictorial Experience: Its Treatment and Significance,” in *Philosophical Perspectives on Depiction*, eds. Catharine Abell and Katerina Bantinaki (Oxford University Press, 2010), pp. 151–180; Bence Nanay “Inflected and Uninflected Experience of Pictures,” in *Philosophical Perspectives on Depiction*, pp. 181–207.

40. Wollheim, “Seeing-as, Seeing-in, and Pictorial Representation,” pp. 214–215.

41. Wollheim, “Seeing-as, Seeing-in, and Pictorial Representation,” pp. 214–215; Wollheim, “On Pictorial Representation,” p. 221; and Wollheim, *Painting as an Art*, p. 46.

42. See, for example, Wollheim, “Seeing-as, Seeing-in, and Pictorial Representation,” p. 213.

43. Wollheim, “Seeing-as, Seeing-in, and Pictorial Representation,” p. 218.

44. Malcolm Budd, *Values of Art: Pictures, Poetry, and Music* (London: Allen Lane, 1995), p. 58.

45. See K. G. V. Pontus Hultén (ed.), *The Arcimboldo Effect: Transformations of the Face from the 16th to the 20th Century* (Milan: Bompiani, 1987) for a good summary of the development of this subgenre.

46. Heinrich Wölfflin, *Classic Art: An Introduction to the Italian Renaissance*, trans. Peter and Linda Murray (London: Phaidon, 1952), esp. pp. 23–29.

47. Richard Wollheim, *On Pictorial Organization* (University of Kansas Press, 2002), p. 10. See also Wölfflin, *Classic Art*, pp. 101–103.

48. When I talk about ‘pre-sixteenth century’ in what follows, what I mean is in centuries immediately preceding the sixteenth century. I do so in order to avoid the debates about our way of looking at pictures in much earlier times; see, for example, Jas Elsner: *Roman Eyes: Visuality and Subjectivity in Art and Text* (Princeton University Press, 2007). See also the rich literature on how seeing may have changed as a result of the emergence of pictures and, as a result, picture perception (in the Upper Paleolithic or maybe even earlier), for example, Merlin Donald, *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition* (Harvard University Press, 1991); Davis, “When Pictures Are Present”; Davis, *A General Theory of Visual Culture*.

49. Gombrich, *Art and Illusion*.

50. See Jack M. Greenstein, “On Alberti’s ‘Sign’: Vision and Composition in Quattrocento Painting,” *Art Bulletin* 79 (1997): 669–698.

51. Baxandall, *Giotto and the Orators*.

52. Baxandall, *Painting and Experience in Fifteenth Century Italy*.

53. See Lopes, *Sight and Sensibility*, for an analysis of the difference between design and surface.

54. See Heinrich Wölfflin, *Renaissance and Baroque*, trans. Kathrin Simon (London: Collins, 1964): p. 33; see also Bence Nanay, “Two-Dimensional versus Three-Dimensional Pictorial Organization,” *Journal of Aesthetics and Art Criticism* 73 (2015): 149–157.

55. In Wartofsky, “The Paradox of Painting.”

56. Davis, *A General Theory of Visual Culture*; Whitney Davis, “What Is Post-Formalism? (Or, Das Sehen an sich hat seine Kunstgeschichte),” *Nonsite.org*, 7 (October 11, 2012), nonsite.org/article/what-is-post-formalism-or-das-sehen-an-sich-hat-seine-kunstgeschichte; Davis, “Succession and Recursion.”

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