

# Art Theory as Visual Epistemology



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Edited by

Harald Klinke

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**P U B L I S H I N G**

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Edited by Harald Klinke

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# INTRODUCTION: THE IMAGE AND THE MIND

HARALD KLINKE

In the 1990s, a movement from art history and philosophy postulated an “iconic turn”. This movement was comparable to the “linguistic turn” in claiming a new approach to the question of how humans constitute reality, but focused on images rather than language. The core question of what was subsequently called *Bildwissenschaft*, or visual studies, is the fundamental ontological question: “What is an image?” This question draws attention to the particular logic of images.<sup>1</sup>

It has been a constant belief of scientists, poets and artists alike that an illustration alongside a text is more than just another representation of the same idea.<sup>2</sup> Not only does a picture say more than a thousand words; compared to text, images show different things differently. The way images represent something obviously follows a different kind of logic, and how this logic fundamentally differs from that of linguistics is under continuous investigation.

In his *Politeia*, Plato described the highest goal for a philosopher: to discover the ideas behind apparent nature. For Enlightenment authors, these ideas were abstract concepts that were best communicated by the written word. Epistemic images, on the other hand, are images that contain more than just the visible, but also a processed higher understanding of the world: in short, knowledge. It has been disputed for centuries how far images are also able to communicate ideas. Since Plato claimed artists are twice removed from ideas and can only produce likenesses of nature,<sup>3</sup> art theory has striven to prove that pictures are also capable of representing higher ideas. In addition, scientists have for a long time used images not

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<sup>1</sup> Gottfried Boehm, “Die Bilderfrage“, in: Was ist ein Bild?, edited by Gottfried Boehm, Munich 1994, 325-343.

<sup>2</sup> Jonathan Miller, “The Mind's Eye and the Human Eye”, in: Daedalus, Vol. 114, No. 4, The Moving Image (Fall, 1985), 185-199

<sup>3</sup> Plato: “Politeia” 597a-598a, in *Plato: Werke in 8 Bänden*, ed. Gunther Eigler, Vol. 4 (Darmstadt: Wiss. Buchges, 1990), 797.

just to illustrate what has been said in texts and equations, but as a means to directly communicate ideas.<sup>4</sup> Moreover, the process of image production is often seen as a process to *develop* ideas.<sup>5</sup>

The image and its potential as an epistemic medium is a central and current field of research. It is obviously an important part of research in art history, visual studies and other humanities disciplines, but is also growing in importance in the natural sciences. This whole field can be encompassed by the term “visual epistemology”.

What is visual epistemology? Epistemology, or the theory of knowledge and justified belief, deals with questions such as “What is knowledge?” and “How can we know?” Plato’s “Allegory of the Cave” describes a system of epistemology in which there are three stages of understanding—from interpreting mere shadows to understanding that these are shadows only and grasping the ideas behind the apparent world.<sup>6</sup> For Plato, those ideas, not the material world, are the highest form of reality and constitute real knowledge.

Immanuel Kant’s *Critique of Pure Reason* (1781) describes how knowledge can be acquired by empirical means and discusses the limits of reason. To draw the line between what humans can and cannot know is the task of epistemology. Kant traces back all knowledge to empirical experience, including visual experience (*Anschauung*),<sup>7</sup> processed by means of *a priori* knowledge and categories, but transforms them into abstract concepts (*Begriffe*) rather than “inner images”.<sup>8</sup>

On the other hand, his contemporary Joshua Reynolds, the British artist and president of the Royal Academy in London, developed a principally *visual* epistemology. In 1771, Reynolds gave a concise account of how ideas are developed by an artist. In the first step, the artist examines nature and forms an idea of it by comparison and contemplation (i.e., mental labour) to extract an archive of idealized mental images. After having formed a number of such ideas, the artist is then able to bring a combination of them to canvas and is thus able to depict an abstraction of nature, instead of merely copying it. The history painter, for example,

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<sup>4</sup> Lorraine Daston and Peter Galison, *Objectivity* (New York, N.Y.: Zone Books, 2010).

<sup>5</sup> Horst Bredekamp, *Galilei der Künstler: der Mond, die Sonne, die Hand*, 2nd ed. (Berlin: Akademie-Verl., 2009).

<sup>6</sup> Plato, “Politeia”, 514a-521b, op. cit., 554–567.

<sup>7</sup> Immanuel Kant, *Kritik der reinen Vernunft* (Riga: Johann Friedrich Hartknoch, 1787), B 33.

<sup>8</sup> Heidegger discussed Kant’s concepts of „Bild“ and „Schema“ in: Martin Heidegger, *Kant und das Problem der Metaphysik* (Bonn: Cohen, 1929), 84-91.

forms a “mental picture” after reading an ancient history and turns that into a painting:

Whenever a story is related, every man forms a picture in his mind of the action and expression of the persons employed. The power of representing this mental picture on canvass [sic] is what we call Invention in a Painter.<sup>9</sup>

That mental picture should be brought to canvas as it is; that is, without “minute peculiarities”—just what Reynolds calls the “general idea”.<sup>10</sup> That general idea is focussed on the most important parts, such as the head and hands of the depicted in a portrait.<sup>11</sup> It might be said that ideas can be both abstract and visual, and that they can be communicated accordingly in words or images.

The aim of such paintings is to target the mind of the beholder and communicate these mental pictures by visual means. Since ancient artists have already performed such mental labour, a contemporary artist, Reynolds said, can study the works of the Old Masters and add their ideas to his mental archive. He is allowed to make use of those visual ideas along with making his own contribution to the public domain of knowledge that is communicated visually. Reynolds’ theory makes heavy use of concepts of his compatriot, John Locke.<sup>12</sup> However, when it comes to images (the realm of artist), he deviates from Locke in his valuation of visual thinking. While philosophers publish their ideas in written words, artists, according to Reynolds, are in a similar way able to communicate their visual ideas in a visual medium.

The word versus image debate has been a preoccupation of philosophers for centuries. So have the questions: What is mental representation? In what sense does visual thinking take place? How could ideas be stored visually in the mind?<sup>13</sup>

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<sup>9</sup> Joshua Reynolds, “Discourse IV,” in *Sir Joshua Reynolds: Discourses On Art*, ed. Robert R. Wark (San Marino: The Huntington Library, 1959), 58.

<sup>10</sup> Ibid.

<sup>11</sup> The artists Benjamin West explained to his colleague John Singleton Copley the “General Affect” as “Due Subordination to the Principle Parts, viz they head and hands” (*Letters & Papers of John Singleton Copley and Henry Pelham, 1739-1776*, ed. C. F. Adams, Guernsey Jones, and W. Chauncey Ford (Boston: The Massachusetts Historical Society, 1914), 57).

<sup>12</sup> Harald Klinke, “Joshua Reynolds teaching art history: Learning from the past for the future,” in *Art History Supplement* 3, no. 1 (January 2013), 17-29.

<sup>13</sup> Descartes wrote in 1640 that ideas are “like” images of things (René Descartes, *Meditationes De Prima Philosophia, In Quibus Dei Existentia, & Animae A Corpore Distinctio, Demonstratur* (Paris: Michaelem Soly, 1641), VII 35/36). See also

It is remarkable that today's psychology has not yet developed a coherent opinion on the nature of mental images, that is experiences that resemble the experience of perceiving an object when this object is not actually present, but is imagined.<sup>14</sup> In the 1970s, the imagery debate that sparked in cognitive neuroscience centred around two opposing ideas. Zenon Pylyshyn stated that if there are different codes such as verbal, visual etc., there has to be a super-code as an overreaching concept. He suggested that mental images just like other sensory data are stored by decomposing them into mathematical propositions that make the brain work like a serial computer.<sup>15</sup> Stephen Kosslyn, on the other hand, stated that the phenomenon of the mental image cannot be fully explained by the propositional theory. He showed that a mental image is neither a calculated mathematical model of an object nor a picture as such, but the brain handles mental images of objects as image-like wholes that simulate principles of visual perception.<sup>16</sup>

In fact, Hermann von Helmholtz had stated in the nineteenth century that visual perception is a process that starts with the camera obscura-like eyes and the retina's ability to transform light rays into neural signals that are unconscious before they are "seen".<sup>17</sup> Today's brain science shows that nerve signals are transferred from the eye to the brain over the optic nerve and the optic radiation pre-processed by the retinal layers and the metathalamus (*lateral geniculate nucleus*)<sup>18</sup>. We can even show that these signals are in fact transmitted from the eye to the visual cortex in a "retinotopic" manner. This means a mapping of retinal cells to brain cells

Andreas Kemmerling, "Das Bild als Bild der Idee," in *Bilder in der Philosophie und in anderen Künsten und Wissenschaften*, ed. Jakob Steinbrenner and Ulrich Winko (Paderborn: Schöningh, 1997), 184.

<sup>14</sup> Nigel J. T. Thomas, "Mental Imagery, Philosophical Issues About," in *Encyclopedia of Cognitive Science*, ed. Lynn Nadel, Vol. 2 (London: Nature Publishing/Macmillan, 2003), 1147–1153.

<sup>15</sup> Zenon W. Pylyshyn, "What the mind's eye tells the mind's brain: A critique of mental imagery," *Psychological Bulletin* 80, no. 1 (July 1973), 5.

<sup>16</sup> Stephen M. Kosslyn and James R. Pomerantz, "Imagery, propositions, and the form of internal representations," *Cognitive Psychology* 9 (1977), 56. See also Keith M. Opdahl, *Emotion as meaning: the literary case for how we imagine* (Lewisburg, Pa.: Bucknell University Press, 2002), 34.

<sup>17</sup> Hermann von Helmholtz, *Ueber das Sehen des Menschen: Ein populär-wissenschaftlicher Vortrag, gehalten zu Königsberg in Preußen am 27. Febr. 1855* (Leipzig: Leopold Voss, 1855) and *Handbuch der physiologischen Optik* (Leipzig: Leopold Voss, 1856-1866).

<sup>18</sup> Hans-Otto Karnath and Peter Thier, ed. *Kognitive Neurowissenschaften*, 3rd ed. (Berlin: Springer Medizin, 2012), 36-37.

and is shown in brain scans by means of functional magnetic resonance imaging (fMRI).<sup>19</sup> However, in the neocortex these signals are stored, processed and retrieved in several neuronal layers, with increasing abstraction.<sup>20</sup> In short, in relation to the nervous system, information from the senses (hearing, vision, etc.) is nothing but signals similar in nature that are stored and processed in different parts of the neocortex.<sup>21</sup> How exactly they are stored and accessed is still a matter of debate.

It should be noted here that it was an art historian who first bridged the spheres of the natural sciences and the humanities and their shared interest in the visual. In his book *Visual Thinking* (1968), Rudolf Arnheim put forward the idea of the close integration of visual perception with cognitive processes and in this respect also came to speak of the “mental image”. For him, it is (unlike the perceived external picture) a representation of “the mental grasp of an object from the physical nature of that object itself”.<sup>22</sup> Arnheim links this to abstraction in modern paintings. In his view, “seeing” is not a one-way process, but incorporates feedback from experience and prediction-making. It is, thus, rather a critical aspect of humans’ cognitive capability. Visual perception involves thinking, and thinking makes use of visual imagery.<sup>23</sup>

For Reynolds, picture-making was only a subsequent, technical execution issue following the formation of the ideal design in the mind. For his contemporary William Blake, however, the production of images was not only a simple process of externalization of internal pictures—the process of drawing and painting was central to the process of thinking.<sup>24</sup> It is not perception alone, but the complex process of picture-making that grasps reality and gives ideas about the world some sort of order. Ernst Cassirer developed that notion into a broad theory in the twentieth century. Cassirer’s *Philosophy of Symbolic Forms* (1923-1929) stretches to encompass all human cultural expressions, including artworks. Cassirer,

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<sup>19</sup> Stephen A. Engel, et. al., “fMRI of human visual cortex,” *Nature* 369, no. 525 (June 16, 1994), 525.

<sup>20</sup> Brian A. Wandell, Serge O. Dumoulin and Alyssa A. Brewer, “Visual Field Maps in Human Cortex,” *Neuron* 56 (October 25, 2007), 374.

<sup>21</sup> Jeff Hawkins and Sandra Blakeslee, *On Intelligence* (New York: Owl Books, 2005), 56.

<sup>22</sup> Rudolf Arnheim, *Visual thinking* (Berkeley: Univ. of Calif. Press, 1969), 107. See also Monroe C. Beardsley, “On Arnheim’s ‘Visual Thinking,’” *Journal of Aesthetic Education* 5, no. 3 (July, 1971), 183.

<sup>23</sup> Arnheim, op. cit.

<sup>24</sup> Hazard Adams, “Revisiting Reynolds’ Discourses and Blake’s Annotations,” in *Blake in His Time*, ed. Robert N. Essick and Donald Pearce (Bloomington: Indiana University Press, 1978), 128-144.

who developed his theory at the Hamburg Library for Cultural Studies founded by Aby Warburg, stated that humans give sense to the world by symbolizing their experience in a process of perception and representation.<sup>25</sup>

Eventually, in 2001, Hans Belting used this theory as a foundation to draw attention to the relation of internal and external images. He concluded that the question of images and their epistemic content ultimately points back to the human, who perceives, imagines and creates pictures. Picture-making is thus central to being human. The power of images stems not from the images themselves, but from humans, who give them meaning. Human picture-making represents a short-circuit of internal and external images, of seeing and producing.<sup>26</sup>

Still, the question of what mental images are and how exactly images can represent worldviews remains open. Visual epistemology, then, becomes a central field of research that is best investigated using an interdisciplinary approach. Such research must address a range of interconnected areas, asking questions about internal and external images and the interplay of producer and perceiver of images:

1. Visual perception and feedback processes
2. Cognitive processes and mental images
3. The process of transformation into external pictures
4. Visual thinking
5. Pictorial logic and the epistemic potential of pictures

Philosophy, neuroscience, psychology, computer science and visual studies can contribute much to this debate. And since art history has a long tradition of dealing with pictures, and art theory has developed concepts on this subject for centuries, these disciplines are an important foundation for this new interdisciplinary field of study. It was therefore a pleasure to assemble many distinguished scholars of many ranks and nations at the Art History Conference NORDIK 2012 in Stockholm, where three sessions were exclusively dedicated to the topic: “Art Theory as Visual Epistemology”. This publication intends to outline the territory of this field of research by gathering several such approaches presented at the conference.

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<sup>25</sup> Ernst Cassirer, *Philosophie der symbolischen Formen* (Berlin: Bruno Cassirer, 1923-1929).

<sup>26</sup> Hans Belting, *Bild-Anthropologie: Entwürfe für eine Bildwissenschaft* (Munich: Fink, 2001), 11. See also Konrad Fiedler, *Der Ursprung der künstlerischen Thätigkeit* (Leipzig: Hirzel, 1887).

For the understanding of visual perception and mental images, it makes much sense to look into the cognitive processes that take place if *nothing* is to be seen, that is, to look into how blind people experience the world. Georgina Cole's essay in this volume investigates concepts of blindness in seventeenth and eighteenth century philosophy. It was believed that the blind are able to "see" what is obscured to people with the ability of sight. In fact, the blind man became a symbolic figure representing truth, as vision was believed to deceive. That sparked a discussion on how perception (in particular visual perception) works and on how far it is a reliable source of information on which knowledge can be based upon. To doubt eyes as the primary source of sensory data was not, however, a phenomenon that occurred in the eighteenth century alone. Romana Schuler looks at twentieth century experiments in art and science that investigated optical illusions in order to help evaluate the difference between reality and its subjective appearance.

If art should be a kind of visual philosophy that rivals poetry, as many artists have claimed (*ut pictura poesis*), it has to be able to convey knowledge.<sup>27</sup> The lingering scepticism towards vision, however, leads directly to a questioning of the epistemic status of pictures. Ioana Măgureanu has described the crisis of "ocularcentrism" in the seventeenth century. This crisis was notably not limited to the realm of art, but included scientific depictions as well. Here, the function of the mind comes into play, and reason became the prime force to process sensory data and to generate truth. So, if the content of the mind is the decisive factor in the production of epistemic images, how does the mental process involved actually work? Elisabeth Oy-Marra consults Bellori's concept of cognitive preparation that occurs before executing a painting: the "Idea" that is fundamentally visual plays a central role in this theory and drawing is considered a form of visual thinking that helps develop that idea.

It is often said that an image has to be "read" and we have to understand its "language". These are words borrowed from linguistics that serve the function of placeholders until we find other, more appropriate terms that describe how images make us understand their meaning in their own pictorial logic—a logic that is obviously fundamentally different from the logic of texts. Karolina Ugglä examines images that at first sight seem to be far from art and discusses whether they are being looked at or "read". Maps serve as a helpful example for the investigation into pictorial logic. Contrary to, say, satellite imagery, they are not only able to show reality as it is, but by making use of pictorial logic they are able to represent certain

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<sup>27</sup> Harald Klinke, *Amerikanische Historienmalerei: Neue Bilder für die Neue Welt* (Göttingen: Graphentis, 2011), 40.

topological insights and contexts in the real world. They have the capability to make visible concepts and ideas by the use of imagery.

If ideas are generated by sensory data processed by reason, how can such mental images be transferred into pictures that communicate these ideas by means of a pictorial “language”? The academic discipline of art history has developed a procedure with which to decipher the meaning of pictures on three levels. Michael Ranta, therefore, revisits in his essay Erwin Panofsky’s iconography. To approach a picture using this method means to systematically uncover layers of meaning. This might also show the capability and limits of pictures to actually communicate ideas or worldviews to a recipient.

This leads to the core question of visual epistemology: how far are pictures able to communicate knowledge at all? Jochen Briesen looks at this question from a philosophical point of view. He reviews the term “knowledge”, in order to evaluate different approaches to answering the question. If art is then limited in its ability to convey knowledge, he suggests, it can at least help with an understanding that is fundamentally based on a visual system to mentally organize reality.

If this means picture-making is an act of symbolizing—in Cassirer’s sense—we have to take a closer look at the action of the body in the process of image production. Consequently, Riikka Niemelä has investigated performance art and its non-verbal physical expression of thoughts. She points out that the individual’s body becomes the epistemic medium that is the source and centre of our images and becomes an image itself. Being in the world is the prerequisite for a system of meaning that gives sense to the world.

This broad selection of essays outlines the territory of visual epistemology and points to fruitful future research on the topic. The initiator of the sessions and the contributors would like to thank the organizing committee of the NORDIK conference and their financial supporters for the opportunity to come together in Stockholm in order to exchange ideas. We also would like to thank Cambridge Scholars Publishing for their willingness to make these talks available to a wider audience by publishing this volume.

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# PICTORIAL ART AND EPISTEMIC AIMS

JOCHEN BRIESEN

## Introduction

The question whether art is of any epistemic value is an old question in the philosophy of art. Whereas many contemporary artists, art-critics, and art-historians answer this question affirmatively, many contemporary philosophers remain sceptical. If art is of epistemic significance, they maintain, then it has to contribute to our quest of achieving our most basic epistemic aim, namely knowledge. Unfortunately, recent and widely accepted analyses of knowledge make it very hard to see how art might significantly contribute to the quest of achieving this aim. Hence, by the lights of recent epistemology, it is highly questionable whether art is of any epistemic value.

In order to hold on to the epistemic value of art, one has three options: (a) reject the recent analyses of knowledge that make the epistemic value of art questionable, (b) accept the recent analyses of knowledge but argue that they are compatible with the epistemic value of art, or (c) find another epistemic aim (besides knowledge) and show that art is of significant help in achieving this aim.

In this paper, I will consider option (c). I will argue that, at least with respect to pictorial art, this option seems promising. By reconsidering some basic insights and ideas from Nelson Goodman, we can identify (*objective*) *understanding* as an epistemic aim to which pictorial art makes a significant contribution. Thus, I will claim that, even (or especially) in the lights of recent developments in epistemology, everybody interested in the epistemic significance of pictorial art should concentrate on the epistemic aim of understanding, rather than knowledge.

The rest of the paper, is organized as follows. In section 2, I explain which condition on knowledge makes it hard to believe that art might be helpful in achieving it. In section 3, I discuss the notion of understanding and outline how the notion of understanding has to be characterized, if understanding is supposed to be an epistemic aim apart from knowledge. In section 4, I introduce Nelson Goodman's theory of symbols. Finally, in

section 5, I attempt to show how the epistemic significance of pictorial art can be defended, when the characterization of understanding given in section 3 is combined with certain insights of Goodman's theory.

## Knowledge

The term "knowledge" can mean different things. As a preliminary, however, it may be useful to differentiate between objectual, practical, and propositional knowledge. Objectual knowledge is expressed by sentences of the form "*S* knows *X*", where "*X*" stands for a name or a definite description—for instance, "*S* knows Cher" (in German this kind of knowledge is expressed by the verb "kennen", rather than "wissen"). Practical knowledge or know-how is the knowledge involved in being able to do something—for instance, knowing how to ride a bike. Finally, propositional knowledge is expressed by sentences of the form "*S* knows that *p*", where "*p*" can be substituted by any assertoric sentence. Since the contents of such sentences are called propositions, this kind of knowledge is called "propositional knowledge". Whether and how these different kinds of knowledge are interrelated is controversial, but it is uncontroversial that from an epistemic perspective propositional knowledge seems especially important. It is mostly propositional knowledge, which we seek to achieve in our various scientific projects. Thus, it is propositional knowledge, which should be considered one of our genuine *epistemic* aims. So if we are going to claim that the epistemic significance of art has something to do with knowledge, we should focus on propositional knowledge rather than these other forms of knowledge.

Traditionally, propositional knowledge (henceforth simply "knowledge") has been defined as justified, true belief:

An epistemic subject *S* knows that *p*, if and only if

- (1) *S* believes that *p*,
- (2) *S*'s belief that *p* is true, and
- (3) *S*'s belief that *p* is justified.

Today this definition of knowledge is widely dismissed. Various thought experiments (so-called Gettier-cases)<sup>1</sup> seem to show that the con-

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<sup>1</sup> These cases are called after Edmund Gettier, who presented two effective counterexamples against the mentioned definition of knowledge, see: Edmund Gettier, "Is Justified True Belief Knowledge?" *Analysis* 23 (1963): 121-123. For a helpful overview with respect to the discussion that followed this paper, see Jonathan Jenkins Ichikawa and Matthias Steup, "The Analysis of Knowledge", *The Stanford*

ditions (1)-(3) are not sufficient for knowledge. Imagine the following case.<sup>2</sup>

*Fake-Barn Case.* Henry drives through an area in which almost all things that appear to be barns are not real barns but merely barn facades—that is, things that exactly look like barns from the road Henry is driving on but in fact are nothing but construction of paper-maché painted to look like barns. Henry looks out of the car window and by sheer luck, he happens to be looking at the one and only real barn in the area. He thereby believes that there is a (real) barn over there.

Henry's belief is true, and in a certain sense the belief also seems to be justified—in other words, conditions (1)-(3) are satisfied. But even though conditions (1)-(3) are satisfied, we are hesitant to call Henry's belief that there is a (real) barn over there an instance of knowledge.

Many philosophers think that cases like this do not only illustrate that conditions (1)-(3) are not sufficient for knowledge, they think that these cases also illustrate what is missing: In order to know that *p*, the process that led the subject to believe that *p* has to be reliable—that is, it has to be a process that leads to true beliefs most of the time. In the fake-barn case Henry's belief forming mechanism—which can be described as the process of looking out of the window, having the visual experience of a barn, thereby forming the belief that there is a barn—is not reliable. In the area through which Henry is driving, this process will easily lead to false beliefs. Thus, by considering scenarios like the fake-barn case many philosophers have come to hold that a necessary condition for a belief to count as an instance of knowledge is that the belief is formed by a reliable belief-forming mechanism.

However, as soon as one accepts this condition for knowledge, the epistemic significance of art in general and pictorial art in particular becomes questionable. To be sure, the serious and detailed involvement with works of art might reliably lead to true beliefs concerning the works themselves, i.e., their structure and form, who created them, when they were created, etc. However, do we thereby come to know propositions that are not concerned with specific works of art? With respect to matters over and above a particular work of art, it seems obvious that involvement with art is not a *reliable* belief forming mechanism. For instance, the involvement with art does not reliably produce true beliefs concerning the chemical structure of

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*Encyclopedia of Philosophy* (Winter 2012 Edition), edited by Edward N. Zalta, URL = <<http://plato.stanford.edu/archives/win2012/entries/knowledge-analysis/>>.

<sup>2</sup> Cf. Alvin Goldman, "Discrimination and Perceptual Knowledge", *Journal of Philosophy* LXXIII, (1976): 771-791.

certain liquids, the cause of certain diseases, the orbit of certain planets, or other matters concerning the world we might be interested in.<sup>3</sup> Hence, if our epistemic aim is knowledge and if knowledge is reliably-formed true belief (together with other knowledge-conditions), then we are ill-advised to turn to art in order to achieve our epistemic aim.

But maybe there are other epistemic aims besides knowledge and maybe some works of art play a significant role in achieving these other aims. Could understanding be an epistemic aim of this kind? If it were, then we could accept that art does not contribute to our quest of achieving knowledge without thereby losing its epistemological significance. However, in order to spell out this idea in detail, we first have to specify what understanding is. At least with respect to pictorial art, this will eventually put us in a position to explain in detail why involvement with art is conducive to understanding.

## Understanding

Since understanding is a very complex matter, the recent literature on the nature of understanding is filled with controversies. One major controversy is over whether understanding should be analyzed in terms of knowledge. In this vein, some philosophers maintain that understanding is nothing but knowledge, namely knowledge of causes.<sup>4</sup> If such a knowledge-based account of understanding were correct, then the insinuated defence of the epistemic significance of art would be doomed to fail. After all, if such an account were correct, then understanding would be nothing but an instance of knowledge. And if understanding were nothing but knowledge, then it would be inconsistent to accept that art is *not* conducive with respect to knowledge, but nevertheless claim that art is conducive with respect to understanding. Thus, if the insinuated defence of the epistemological significance of art in general and pictorial art in particular is supposed to have any chance of success, such a knowledge-based account of understanding must be wrong.

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<sup>3</sup> Note that I do not want to claim that involvement with art never results in a true belief with respect to matters like that. All I want to claim is that involvement with art does not constitute a particularly reliable belief-forming process regarding beliefs of this sort.

<sup>4</sup> See for example: Peter Lipton, *Inference to the Best Explanation* (London: Routledge, 2nd ed. 2004), 30. Some claim that such a knowledge based account of knowledge in fact is dating back as far as Aristoteles, see John Greco, *Achieving Knowledge* (Cambridge: Cambridge University Press, 2010), 9.

Unfortunately, within the context of this paper I will neither be able to argue in detail that knowledge-based accounts of understanding are wrong, nor will I be able to give a full fledged alternative theory of understanding. But I will at least give a few reasons to think that strong knowledge-based accounts of understanding are false. More precisely, I will give reasons for thinking that knowledge is at least not *sufficient* for understanding.<sup>5</sup> Furthermore, even though I will not give a full-fledged theory of understanding, I will at least identify some aspects of understanding that distinguish understanding from knowledge and that strike me as especially important. Fortunately, these aspects will later prove useful in specifying how exactly pictorial art might be conducive to understanding, even though it is not conducive to knowledge. Thus, I will at least clarify and to a certain extent motivate the assumptions one is committed to, if one puts forward the insinuated defence of the epistemic value of (pictorial) art.

As with respect to knowledge, we should first differentiate between objectual and propositional understanding. Objectual understanding is expressed by sentences of the form “*S* understands *X*”, where *X* can be substituted by a singular term—for instance, the understandings of persons, phenomena, processes, or theories. Propositional understanding, on the other hand, is expressed by sentences of the form “*S* understands that *p/why p*”, where “*p*” is substituted by an assertoric sentence—for instance, understanding why my house is on fire, etc. For both kinds of understanding there are reasons to think that understanding is not identical to knowledge insofar as knowledge is not sufficient for understanding.

With respect to propositional understanding, Duncan Pritchard invites us to consider the following case:<sup>6</sup>

*Young-Child Case.* Sarah discovers that her house is on fire. One of the fire fighters, who is very competent and never lies, tells Sarah that faulty wiring caused the fire, which is actually true. Sarah believes what she has been told. Sarah’s young child asks her why the house is on fire and Sarah, who

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<sup>5</sup> We can differentiate between strong and weak knowledge-based accounts of understanding. A strong account claims that understanding is identical to knowledge—that is, it claims that knowledge is necessary and sufficient for understanding, whereas a weak account claims that knowledge is merely necessary for understanding. Whether weak accounts are correct is not discussed in the context of this paper. It will turn out that for specifying the insinuated defense of the epistemic value of art, it is enough to show that strong knowledge-based accounts are wrong.

<sup>6</sup> Duncan Pritchard et al., *The Nature and Value of Knowledge* (Oxford: Oxford University Press, 2010), 81.

also never lies, tells the child that the house is on fire due to faulty wiring. Thereby the child comes to believe that the house is on fire because of faulty wiring.

According to Pritchard, it seems reasonable to think that the child's belief in this case qualifies as knowledge.<sup>7</sup> However, at the same time, the child might have "no conception of how faulty wiring might cause fire"<sup>8</sup> and thus it also seems reasonable to say that the child lacks an *understanding* of why the house is on fire. Hence, the case seems to prove that knowledge is not sufficient for propositional understanding. Furthermore, the case illustrates that in order to understand that *p/why p*, one has to appropriately correlate the belief that *p* to other beliefs. For instance, in order to understand why the house is on fire, one has to correlate the belief that the house is on fire because of faulty wiring with the belief that faulty wiring might lead to a short-circuit and with the belief that short-circuits might generate heat, etc.

The same line of thought can be put forward if understanding concerns not a single proposition but a whole body of information, as in some cases of objectual understanding—for instance, the understanding of a certain theory. Let us assume that a theory is in part constituted by a set of information. An epistemic subject *S* might well know all these individual items of information, but it seems reasonable to suppose that as long as all these individual items of information are not pieced together in the right way by *S*, *S* does not understand the theory. Hence, knowledge of individual pieces in a set of information is not sufficient for understanding a theory or a complex phenomenon. What understanding a theory or a complex phenomenon requires is the awareness of explanatory or other coherence-inducing relationships concerning individual pieces of information.<sup>9</sup>

Thus, an epistemic subject achieves propositional and some kinds of objectual understanding, only if the subject organizes and systematizes a certain subset of her beliefs by grasping inferential and explanatory relationships between them. But presumably not only the systematization of *beliefs* is relevant, but the systematization of *concepts* as well. For instance, it is plausible to suppose that if a person understands a certain

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<sup>7</sup> This is admittedly a controversial claim. For a critical discussion of Pritchard's case, see: Stephen R. Grimm, "Understanding as Knowledge of Causes." In *Virtue Scientia: Essays in Philosophy of Science and Virtue Epistemology*, edited by Abrol Fairweather. Special Issue of *Synthese*, forthcoming.

<sup>8</sup> Duncan Pritchard et al., *The Nature and Value of Knowledge* (Oxford: Oxford University Press, 2010), 81.

<sup>9</sup> Cf. Jonathan Kvanvig, *The Value of Knowledge and the Pursuit of Understanding* (Cambridge: Cambridge University Press, 2003), 192.

process—say, the process of photosynthesis—the person has identified and classified the entities involved in that process by the use of concepts, sub-concepts, sub-subconcepts, etc. Furthermore, it is also plausible that the person has classified the process itself in subprocesses, sub-subprocesses, sub-sub-subprocesses, etc. These systematic classifications eventually enable the person to discover and identify the process, even if it is realized differently. For example, photosynthesis is performed differently by different species of plants. And as far as it is a necessary condition for understanding a process to identify the process over a wide range of instances, this form of classifying the inventory of the world by systematizing *concepts* that refer to reality seems to be a precondition for objectual understanding as well.

If we accept that beliefs and concepts are both mental representations of certain aspects of reality, we can summarize the results of our short discussion of understanding as follows: First, understanding is not identical to knowledge. Second, an essential feature of understanding is organizing our mental representations in a certain way. With respect to beliefs, the systematic organization consists in grasping inferential, explanatory and other coherence-relevant interrelations between them. And with respect to concepts, the systematic organization consists in a hierarchical organization of our concepts in generic terms, subconcepts, sub-subconcepts, etc. In short: An important and essential feature of understanding reality is systematically organizing the representations that refer to reality.<sup>10</sup>

It may be helpful here to consider another idea concerning understanding introduced by Thomas Nagel. In his influential book “The View from Nowhere”, Nagel is interested in the notion of objectivity, where by his lights objectivity should be considered a method of understanding.

To acquire a more objective understanding of some aspect of life or the world, we step back from our initial view of it and form a new conception, which has that view and its relations to the world as its object. In other words, we place ourselves in the world that is to be understood. The old view then comes to be regarded as an appearance, more subjective than the

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<sup>10</sup> Note that this is compatible with different metaphysical views on the nature of reality. Those who wish to reject a Goodman-style Irrealism, have good reason to believe that the systematic organization of our mental representations at least in part reflects a structural organization with regard to the things those representations refer to. However, those who are sympathetic to Goodman’s Irrealism will claim that the systematic organization of our mental representations does not reflect but rather constitutes the structure of the world.

new view, and correctable or confirmable by reference to it. This process can be repeated, yielding a still more objective conception.<sup>11</sup>

For Nagel the ideal endpoint of such a process is a maximally objective standpoint, which he calls the “View from Nowhere” because this ideal endpoint would be detached from any particular perspective. We can build on this idea as follows: A perspective is constituted by our conception of the world, that is, by the concepts we use and how we systematically organize those concepts—or in more general terms, in the way we represent the world and how we systematically organize those representations. As soon as we incorporate our system of representation into the world, we seek to understand, we get a more objective perspective, which results in more objective understanding. The reason why we thereby achieve a more objective understanding is that the resulting perspective on the world is not as restricted as the old one. The new perspective is supposed to incorporate different perspectives and should therefore be less restrictive and more accessible. In other words: If our view on the world is not constituted by just one perspective (that is, by one mode of systematically organized representation) but rather incorporates different perspectives (that is, different modes of systematically organized representations), a more objective—and in a certain sense deeper and more robust—understanding will emerge.

This idea is reflected by the fact that we sometimes experience a more robust and deeper understanding of a certain complex phenomenon *X*, as soon as the phenomenon is represented in different modes of representation. For instance, it is helpful when a text about *X* is accompanied by a diagram, and it is even more helpful if different sorts of diagrams are used simultaneously (tree diagram, three-dimensional diagram, pie chart, etc.). A reason for this might be that the view we extracted from Nagel’s basic idea is right: by using and correlating different modes of representation, we achieve a more objective perspective on reality and thereby a more objective and robust understanding of it.

Even though much more needs to be said in order to spell out this idea in more detail, let us for now assume that something along those lines is correct. We can summarize our short discussion of understanding as follows: An important and essential feature of understanding consists in systematically organizing our representations that refer to reality. With respect to the language-system of representation, concepts and beliefs are the things we systematically organize. By taking various systems of repre-

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<sup>11</sup> Thomas Nagel, *The View from Nowhere* (Oxford: Oxford University Press, 1986), 4.

sentation into account, more objective forms of understanding can be achieved. Why? Perspectives on the world are in part constituted by our systems of representing the world. By correlating and systematically inter-relating different systems of representation we achieve a view on the world that is able to incorporate different perspectives, thus resulting in more objective understanding.

### Goodman's Theory of Symbols – The Basics

In the book “Languages of Art”, Nelson Goodman argues that, like language, art in general and pictorial art in particular constitute a specific system of symbolic representation.<sup>12</sup> Based on his symbol-theoretic account we can perhaps explain in what way pictorial art is conducive to understanding: Involvement with pictorial art is conducive to understanding at least insofar as it fosters cognitive abilities indispensable for (objective) understanding.<sup>13</sup> Before this idea can be spelled out in detail, we first have to introduce Goodman's theory of symbols. Since Goodman's theory is very rich and detailed, I will only discuss those aspects of the theory here that will later prove directly relevant to explain the epistemic significance of pictorial art.

For Goodman, the essential feature of a symbol is reference—to be a symbol means to be a symbol for something, to stand for something, to refer to something.<sup>14</sup> In other words, symbols are representations. There are two important ways a symbol can refer: denotation and exemplification.<sup>15</sup>

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<sup>12</sup> Nelson Goodman, *Languages of Art – An Approach to a Theory of Symbols* (Indianapolis: Hackett, 1976).

<sup>13</sup> Nelson Goodman and Catherine Z. Elgin also argue that involvement with art is conducive to understanding, see for example: Nelson Goodman and Catherine Z. Elgin, *Reconceptions in Philosophy and Other Arts and Sciences* (London: Routledge, 1990). Catherine Z. Elgin, “Art in the Advancement of Understanding”, *American Philosophical Quarterly* Vol. 39 No.1, (2002): 1-12. But even though their arguments also depend on symbol theoretic insights of Goodman, their arguments are nonetheless different from mine. The main difference lies in the fact that their view eventually depends on strong metaphysical assumptions (e.g., on Goodman's Irrealism), whereas my view does not.

<sup>14</sup> Goodman, *Languages of Art*, 5.

<sup>15</sup> These are the two most important conventional ways a symbol might refer to something. But not every form of reference involves denotation or exemplification. Some symbols, namely so-called *signs*, might refer less conventionally by being caused by what they refer to.

Denotation is the relation that holds between, for example, a word and what it applies to. Words denote single objects—as, for instance, the name “Cher” denotes a unique individual—or they denote several individuals—as for instance the predicate “\_ is red” denotes all red things. Goodman believes that pictures (i.e. paintings, drawings, photographs, etc.) are like words in this respect. Like words, pictures refer to something conventionally and not because of certain resemblance relations.<sup>16</sup> In addition, like words, pictures may either denote single objects—as, for example, a portrait denotes a specific person—or they may denote several things—like a picture of a tiger in an encyclopedia, which does not denote a specific tiger but stands for tigers in general.

The other important way of referring is exemplification. We can illustrate exemplification by considering tailors’ swatches of cloth. These swatches are samples that exemplify certain properties of the cloth (the colour, the texture, etc.). Thereby these swatches are used as symbols that refer to certain properties that they instantiate. The difference between denotation and exemplification is simple: A symbol can *denote* anything whatsoever, but it can only *exemplify* properties that it instantiates.<sup>17</sup> There could be a convention by which a specific swatch *denotes* a certain person, but a swatch can only *exemplify* properties it possesses (e.g., being red and blue, being soft, etc.). By Goodman’s lights, exemplification is especially important and widespread in the realm of art. Exemplification allows Goodman to consider abstract paintings or other abstract works of art as symbols that refer to something: by exemplifying some of its own properties, an abstract painting refers (at least) to these properties or to the class of things that instantiate these properties.<sup>18</sup>

So far, we have only considered the literal use of symbols. For Goodman, however, symbols can denote and exemplify metaphorically as well. A painting of a rainy landscape can exemplify sadness. But in order to exemplify sadness, the painting has to instantiate sadness—that is, the painting has to be sad. Of course, it is literally false that the painting is sad,

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<sup>16</sup> In fact, many pages of “Languages of Art” are devoted to the detailed critique of resemblance-theoretic accounts of pictorial reference, see: Goodman, *Languages of Art*, 3-30. See also: Robert Schwartz, “Representation and Resemblance”, *The Philosophical Forum* 7, (1975): 499-512.

<sup>17</sup> Since Goodman commits himself to a strong version of Nominalism what actually is exemplified in his view are not properties but predicates and other labels.

<sup>18</sup> The other reason why the notion of exemplification is especially important in Goodman’s theory of art, is the fact, that Goodman analyses the important concept of aesthetic expression by recourse to exemplification, see: Goodman, *Languages of Art*, 85-95.

only sentient beings can be sad, but it can nevertheless be metaphorically true that it is sad. Thus, the term “sad” can *metaphorically denote* a picture and a picture can *metaphorically exemplify* sadness.

By Goodman’s lights, whether something is literally or metaphorically true is a matter of degree. In part, it depends on how accustomed we are to the application of a predicate to certain objects. Some applications of predicates may have started out as metaphorically true but became literally true due to extensive use. Take for example our talk of “large numbers”: we apply the predicate “large” to numbers without being aware anymore that numbers are not literally large.<sup>19</sup> Thus, Goodman thinks that a powerful and interesting metaphor has to be relatively new. In Goodman’s words: “Metaphor, it seems, is a matter of teaching an old word new tricks—of applying and old label in a new way.”<sup>20</sup> What happens in a metaphorical use of a predicate is that a classification device (e.g., the predicate “sad”) is transferred from one realm (e.g., human emotions) to another (e.g., paintings). Thus, a metaphor is powerful and interesting insofar as it groups things of different realms together that were not grouped together before, and thereby makes us realize new relations between objects that we have not realized before.

Besides constituting direct reference-relations, denotation and exemplification can also work together in long and complicated chains of reference. A simple example is the case in which a picture of a bald eagle refers to the United States of America: The picture *denotes* a certain class of birds, these birds *exemplify* “independence and freedom”, while these terms in turn are supposed to *denote* the United States.<sup>21</sup>

We have discussed two ways in which a symbol might refer to something, denotation and exemplification. We have seen that both ways of referring can occur literally or metaphorically and that both ways of referring can work together in chains of reference. However, what determines to what a given symbol refers? For Goodman, there is nothing internal to the symbol that determines what it stands for. This is instead determined by the symbol-system to which the symbol belongs. This is why one and the same physical mark (sound, inscription, picture, etc.) can refer to very different things. For instance the physical mark “chat” can either refer to a certain kind of conversation in the symbol system of written English or to cats in the symbol system of written French; or the mark in Fig. 1 might in

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<sup>19</sup> Cf. Daniel Cohnitz and Marcus Rossberg, *Nelson Goodman*, (Chesham: Acumen, 2006) 147.

<sup>20</sup> Goodman, *Languages of Art*, 69.

<sup>21</sup> Nelson Goodman, *Of Mind and Other Matters* (Cambridge, MA: Harvard University Press, 1984), 62.

a certain system refer to a specific mountain range, but in another system it might refer to the development of car sales over a specific period of time.



Fig.1

To what a certain symbol refers and what kind of symbol it is (whether it is a word, a picture, a diagram, etc.) is determined by the system to which the symbol belongs, where an identical physical mark might belong to different symbolic systems. Goodman suggests different syntactic and semantic parameters by which symbolic systems can be characterized. The specific parameters of *syntactic and semantic density*, as well as *repleteness*, are of special importance for the purposes of this paper, as it is the combination of these parameters that will prove essential to the symbolic system of pictorial art.

The syntactic part of a symbol system is called the “symbol scheme” that consists of characters, where a character is a class of marks. In the symbol scheme of written English, for instance, we find the character “a”, where all sorts of different marks belong to this character: “A”, “*A*”, “*a*”, etc. Of course, not just any scribble, noise or other mark belongs to a character, but marks that do belong to a character are called “inscriptions”.

So what does it mean for a system to be syntactically dense? Simply put, a system is *syntactically dense*, if we are unable to decide in finite steps to which character a certain inscription belongs—so that given any two inscriptions, no matter how small the difference between them, they could belong to different characters. The symbol scheme of written English is not dense. However, let us consider a symbol scheme that has as different characters straight lines that differ in length. If any difference in length, no matter how small it might be, is relevant to determining the character, then we cannot decide to which character a certain inscription belongs—after all, measurement is only precise to a certain degree. So if we measure that a certain line is 2,55 mm long, then we can determine that the mark does not belong to the characters that correspond to 2,54 mm or 2,56 mm. Nevertheless, we cannot conclude that the mark really belongs to the character that corresponds to 2,55 mm, because our measurement is not precise enough to determine whether the mark might in fact be 2,551 mm long. However, the character corresponding to 2,551 is different from the

character corresponding to 2,55, so our measurement does not determine which character the line belongs to. Since between any two rational numbers there will be a third one, the situation will be the same no matter how precisely we measure.

The parameter of *semantic density* can be characterized analogously as follows: A symbolic system is *semantically dense*, if given any two characters, no matter how small the difference between them, may have different referents.

A pressure gauge with an unmarked circular face and a single pointer that smoothly moves clockwise as the pressure rises can serve as an example for a system that is *syntactically* as well as *semantically* dense. Any difference in the position of the pointer, no matter how tiny and unrecognizable, may correspond to a different character in the system scheme, thus the system is syntactically dense. Furthermore, any difference in the character (the position of the pointer), no matter how tiny and unrecognizable, may stand for a different correlation to the field of reference (amount of pressure), thus the system is also semantically dense. On Goodman's view, the system of pictorial art is semantically and syntactically dense as well.<sup>22</sup> But if pictorial works of art are likened in this way to things like ungraduated instruments of measurement, they also need to be distinguished from them.

Goodman explains the difference by recourse to the parameter of *repleteness*. The difference between works of pictorial art and ungraded instruments of measurement or various forms of diagrammatic depiction is that, of these, only works of pictorial art are *relatively replete*. That is, for the interpretation of a work of art typically a larger number of features is relevant than for the interpretation of a diagram or a measuring device. Goodman illustrates the difference with the curve of an electrocardiogram that is indistinguishable from a drawing by Hokusai:

The difference is syntactic: the constitutive aspects of the diagrammatic as compared with the pictorial character are expressly and narrowly restricted. The only relevant features of the diagram are the ordinate and the abscissa of each of the points the center of the line passes through. The thickness of the line, its color and intensity, the absolute size of the diagram, etc., do not matter; whether a purported duplicate of the symbol belongs to the same character of the diagrammatic scheme depends not at all upon such features. For the [Hokusai] sketch, this is not true. Any thickening or thinning of the line, its color, its contrast with the background, its size, even the quality of the paper—none of these is ruled out, none can be ignored.<sup>23</sup>

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<sup>22</sup> Goodman, *Languages of Art*, 226-227.

<sup>23</sup> *Ibid.*, 229

From an aesthetic perspective, the density and repleteness of pictorial works of art are especially interesting. Both features explain the fact that works of art provide a wide and almost never-ending variety of discoveries, continually resulting in new interpretations of the work. Thus, the notions of density and repleteness allow Goodman to account for what Kendall Walton<sup>24</sup> has referred to as an “open-endedness” in the investigation and interpretation of pictures.<sup>25</sup>

### **Pictorial Art and Understanding**

Based on the characterization of understanding in section 3 and on Goodman’s theory of symbols outlined in section 4, we now have the resources to specify in what way involvement with pictorial art is conducive to our epistemic aim of (objective) understanding.

Our discussion of understanding has revealed the following: An important and essential feature of understanding consists in systematically categorizing and organizing reality by systematically organizing our representations that refer to reality. With respect to the language-system of representation, concepts and beliefs are the things we systematically organize. To achieve more objective forms of understanding, various systems of representation have to be taken into account and systematically connected. Since perspectives on the world are partially constituted by our systems of representing the world, by correlating and interrelating different systems of representation we achieve a view on the world that is able to incorporate different perspectives, thus resulting in more objective understanding.

If we accept this characterization of understanding, we can combine it with the following claims based on Goodman’s theory of symbols:

- (a) Pictorial works of art are symbols embedded in a specific symbolic system. Concepts and beliefs are symbols embedded in other symbolic systems, namely systems of natural languages.

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<sup>24</sup> Kendall Walton, *Mimesis as Make-Believe* (Cambridge, MA.: Harvard University Press, 1990).

<sup>25</sup> Furthermore, these features explain why as far as works of art are concerned we have to pay close attention to the physical symbol (the painting, sculpture, etc.) itself. With works of art we cannot so to speak look through the symbol and concentrate on what it refers to, as we do it with traffic lights or scientific texts. Cf. Goodman, *Of Mind and Other Matters*, 69.