Epistemic Aims and Pictorial Art

(This is the penultimate draft of a paper that is forthcoming in: H. Klinke (ed), *Art Theory as Visual Epistemology*. Cambridge Scholar Publishing.)

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1. 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 skeptical. 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, option (c) 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) by 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.

2. 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 in 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 for 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)[1] seem to show that the conditions (1)-(3) are not sufficient for knowledge. Imagine the following case:[2]

> *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's 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

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

[2] Cf. Alvin Goldman, "Discrimination and Perceptual Knowledge", *Journal of Philosophy* LXXIII, (1976): 771–791.

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. But do we thereby come to know anything about the world over and above the piece of art and the artist? 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 certain liquids, the cause of certain diseases, the orbit of certain planets, or other matters concerning the world we might be interested in.[3] 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.

3. 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

[3] 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.

maintain that understanding is nothing but knowledge, namely knowledge of causes.[4] If such a knowledge-based account of understanding were correct, then the insinuated defense 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 defense 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.

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 fletched 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.[5] 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 defense 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

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[4] 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.

[5] 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.

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:[6]

> *Young-Child Case.* Sarah discovers that her house is on fire. One of the firefighters, 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 also never lies, tells the child that it is on fire because of 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.[7] But at the same time, the child might have "no conception of how faulty wiring might cause fire"[8] and thus it seems also 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

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[6] Duncan Pritchard et al., *The Nature and Value of Knowledge* (Oxford: Oxford University Press, 2010), 81.
[7] 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.
[8] Duncan Pritchard et al., *The Nature and Value of Knowledge* (Oxford: Oxford University Press, 2010), 81.

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.[9]

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 process – say, the process of photosynthesis – the person has identified and classified the entities involved in that process by the use of concepts, subconcepts, 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 – as 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.[10]

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[9] Cf. Jonathan Kvanvig, *The Value of Knowledge and the Pursuit of Understanding* (Cambridge: Cambridge University Press, 2003), 192.

[10] 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

It may be helpful here to introduce 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 that the new view, and correctable or confirmable by reference to it. This process can be repeated, yielding a still more objective conception.[11]

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,

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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.

[11] Thomas Nagel, *The View from Nowhere* (Oxford: Oxford University Press, 1986), 4.

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 representation 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 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.

4. 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.[12] 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.[13] 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

[12] Nelson Goodman, *Languages of Art – An Approach to a Theory of Symbols* (Indianapolis: Hackett, 1976).
[13] 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.

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.[14] In other words, symbols are representations. There are two important ways a symbol can refer: denotation and exemplification.[15]

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 an unique individual – or they denote several individuals – as for instance the predicate "_ is red" denotes all red things. Goodman believes that pictures are like words in this respect. Like words, pictures refer to something conventionally and not because of certain resemblance relations.[16] And 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 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.[17] 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

[14] Goodman, *Languages of Art*, 5.
[15] 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.
[16] 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, "Repesentation and Resemblance", *The Philosophical Forum* 7, (1975): 499-512.
[17] 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.

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.[18]

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, 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.[19] 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."[20] 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*

[18] 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.
[19] Cf. Daniel Cohnitz and Marcus Rossberg, *Nelson Goodman*, (Chesham: Acumen, 2006) 147.
[20] Goodman, *Languages of Art*, 69.

a certain class of birds, these birds *exemplify* "independence and freedom", while these terms in turn are supposed to *denote* the United States.[21]

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. But what determines to what a given symbol refers? For Goodman there is nothing internal to the symbol that determines what the symbol 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 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 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.

The syntactic part of a symbol system is called the "symbol scheme" and 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

[21] Nelson Goodman, *Of Mind and Other Matters* (Cambridge, MA: Harvard University Press, 1984), 62.

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, but 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, they 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 pictures is semantically and

syntactically dense as well.[22] 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 pictures and ungraded instruments of measurement or various forms of diagrammatic depiction is that, of these, only pictures are *relatively replete*. That is, for the interpretation of a picture 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.[23]

From an aesthetic perspective, the density and repleteness of pictorial works 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[24] has referred to as an "open-endedness" in the investigation and interpretation of pictures.[25]

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[22] Goodman, *Languages of Art*, 226-227.
[23] Ibid, 229.
[24] Kendall Walton, *Mimesis as Make-Believe* (Cambridge, MA.: Harvard University Press, 1990).
[25] 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.

5. Pictorial Art and Understanding

Based on the characterisation 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.

(b) The symbolic system of pictorial artwork is syntactically and semantically dense, whereas systems of natural languages are not.

(c) The symbolic system of pictorial artwork is relatively replete, whereas systems of natural languages are not.

(d) Pictorial works of art often refer indirectly via complex chains of reference in which exemplification plays a crucial role. This is not the case in systems of natural language. The constituents of language systems primarily refer directly and the mode of reference is primarily denotation.

Each of the claims (a)-(d) speaks of an interesting feature of pictorial art, which in a certain sense can be considered conducive to our quest of achieving the epistemic aim of (objective) understanding as we have characterized it above.

If claim (a) is true, then pictorial works of art function as devices of classification. As such a device, a piece of art is particularly effective and interesting if it somehow provides a "fresh look" on the object it refers to, e.g. if it depicts a common object in a new and insightful manner. Goodman compares pictorial works of art in this respect with metaphors. We have already specified that successful metaphors help us discover new relations between objects or realms of objects, thereby opening up new ways to classify reality, which might be helpful and can eventually lead to new insights. For Goodman the same is true of paintings: "The marking off of new elements or classes, or of familiar ones by labels of new kinds or by new combinations of old labels, may provide new insight."[26]

Our classification of objects is based on commonalities and resemblances between objects. Instead of resting on existing resemblance relations, pictorial works of art have the power to influence existing standards of resemblance – think of some cubist paintings, for instance. In this sense, new movements and styles of depiction can question our established classification of the inventory of the world. Pictorial works of art literally make us see that our established system of categorization is restricted, insofar as it highlights certain relations and commonalities between objects at the cost of ignoring others. By highlighting alternative and maybe useful ways of (re-)categorizing reality, pictorial works of art can be considered to be at least potentially conducive to understanding. After all, understanding in part consists of categorizing and systematically organizing the inventory of the world.

If claims (b) and (c) are correct, then the symbolic system of pictorial art is syntactically/semantically dense and relatively replete. We have already noted that density and repleteness together account for the potential open-endedness with respect to the investigation and interpretation of pictorial artwork. Since an attempt to interpret a picture is an attempt to verbalize its meaning – e.g., an attempt to correlate a symbol of one

[26] Goodman, *Languages of Art*, 33.

system of representation to symbols of another system of representation – entering such a potentially open-ended interpretative process will train abilities, which are indispensable for objective understanding. After all, an essential feature of objective understanding as we have characterized it consists precisely in combining and relating different systems of representations.

If claim (d) is right, then in order to understand what a painting refers to demands following a chain of reference comparable to the chain of reference in the case where the picture of a bald eagle refers to the United States of America. Chains of reference by which works of art refer can be even longer and more complex. Thus, understanding what a pictorial work of art possibly refers to presupposes correlating constituents of different systems of representation. Given our characterisation of objective understanding, we can again conclude that involvement with pictorial works of art will train abilities, which are indispensable for gaining more objective forms of understanding.

Thus, if the given characterization of (objective) understanding and some of Nelson Goodman's symbol-theoretic views on pictorial art are correct, then involvement with pictorial art is at least indirectly conducive to understanding. Involvement with art does not guarantee that we achieve more (objective) understanding. However, if claims (a)-(d) are correct, then we have seen that pictorial art at least has the potential to do so (see (a)). More importantly, we have seen that serious involvement with pictorial works of art will train exactly those cognitive abilities we need in order to achieve objective forms of understanding (see (b)-(d)).

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