Pictures as Incomplete Representations[*]

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How do we acquire thoughts and beliefs about particulars by looking at pictures? One kind of reply essentially compares depiction to perception, holding that picture- perception is a form of remote object-perception. Lopes's theory that pictures refer by demonstrative identification, and Walton's transparency theory for photographs, constitute such *remote acquaintance* theories of depiction. The main purpose of this paper is to defend an alternative conception of pictures, on which they are not suitable for acquainting us with particulars but for acquainting us with certain kinds of properties. This conception is outlined in §4, where it is argued that pictures are useful devices for what Heal has called *indexical predication*. In §2 and §3, I explain why I believe that remote acquaintance theories are false, and why picture-perception cannot function as a form of extended or remote object-perception. The main reason is that the contents of picture-perceptions do not themselves provide the kind of numerical and contextual information required for singular thought. Picture-reference is instead secured by independent beliefs or linguistic communication about the causal history of pictures as objects. In other words, it is beliefs about the numerical identity of pictures as *objects* that anchors the reference of the *representational contents* of pictures.

I. Pictures, Causal Connections and Acquaintance

Several kinds of argument can lend support to the idea that pictures cause *de re*, or singular, thoughts. The simplest is from causal connectedness. For the straightforward case of photographs, which are always endowed with the appropriate causal relata, the argument would say: 'Photographs

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refer causally to particulars or to portions of space; so when photographs are perceived, they cause token thoughts which have those particulars as relata or *res*'. The argument can be constructed by using a causal theory of pictorial reference, such as that outlined by Flint Schier, and a relational theory of *de re* thought, such as that found in Quine.[1] Quine analyzes *de re* thought as a relation between a subject, a particular, and an attribute; Schier holds that certain pictures (not only photographs, but also some agentively produced pictures such as portraits) refer causally. The causal relation from particular to picture and from picture to token thought meets Quine's relational requirement. Joining the two theories, we get the conclusion that certain pictures cause singular thoughts about the objects they depict.

This kind of argument would be unsatisfactory on any account which held that causal relations alone do not suffice for singular thought.[2] The mere existence of a causal relation between a thought and its object does not suffice to enable a subject to know which particular she is thinking of.[3]

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[1] Flint Schier, *Deeper into Pictures: An Essay on Pictorial Representation*, Cambridge University Press, 1986, pp. 91-92; W.V.O. Quine, 'Quantifiers and Propositional Attitudes', *Journal of Philosophy* 53 (1956): 177-187.

[2] Russell and Frege denied that we can have *de re* thoughts about particular concrete objects under any conditions. The more moderate Neo-Fregean and Neo-Russellian accounts agree that causal relations do not suffice, and that epistemic conditions need to be met by singular thought. David Kaplan ('Quantifying In', *Synthese* 19 [1968]: 178-214) rejects Quine's analysis on the grounds that it fails to explain how a subject can have a particular object in mind, holding that the referent has to be represented in thought under modes of presentation which are proper to perception. Tyler Burge ('Belief De Re', *Journal of Philosophy* 74 [1977]: 338-62) supplements Quine's relational requirement with 'an appropriate nonconceptual, contextual relation to objects the belief is about' (p. 346). For Gareth Evans (*The Varieties of Reference*, Oxford, 1982; pp. 89-93, 145-151), the subject has to be able if necessary to discriminate the object of thought from all other objects. François Recanati (*Direct Reference: from Language to Thought*, Oxford, 1997; Chapters 6, 7) requires both specific modes of presentation and knowing-which.

[3] An example by John Perry brings this out nicely: 'I once followed a trail of sugar on a supermarket floor, pushing my cart down the aisle on one side of a tall counter and back the aisle on the other, seeking the shopper with the torn sack to tell him he was making a mess. With each trip around the counter, the trail became thicker. But I seemed unable to catch up. Finally it dawned on me. I was the shopper I was trying to catch' (*The Problem of the Essential Indexical and Other Essays*, Oxford, 1993; p. 33). Perry is causally related to the referent of his thought ('the individual making a mess'), but does not know

In that case, as far as the subject is concerned, the thought can be true of anything which satisfies its descriptive components, and its cognitive role becomes indistinguishable from that of a *de dicto* thought.

Remedies to this problem proceed by placing epistemic constraints on singular thought. Among those constraints, the ones that pictures are likely to satisfy (and that pictures are expected to satisfy by some depiction theorists, such as Lopes and Walton) are perceptual or perceptual-style contraints.[4] Such epistemic constraints have been described by David Kaplan, Tyler Burge, Gareth Evans, Kent Bach, and François Recanati, among others, who seek to define forms of acquaintance with concrete particulars.[5] The model for acquaintance with particulars is direct object-perception, but in some cases acquaintance is extended to include more attenuated representational connections:[6] 'epistemically rewarding relations' in which we are 'so related to [the] object that we can gain information from it'.[7] If there is acquaintance with particulars through pictures, it will be some such form of remote object-perception; and this is how certain theories of depiction have understood our relation to the objects shown by pictures.

Consider Dominic Lopes's theory that pictures refer by demonstrative identification and re-identification.[8] Successful demonstrative identifica-

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which individual, coming under the description, the referent of the thought is.

[4] An example of a *non*-perceptual epistemic constraint on singular thought is the constraint Recanati places on the grasp of proper names. Each singular thought requires the presence of a distinct mental file containing information about its referent. The mental files for proper names do not have to contain perceptual information (François Recanati, *Direct Reference: from Language to Thought*, Oxford, 1997; pp. 125-128). But as such, this kind of constraint does not provide support for the theory that pictures provide remote object-*perceptions*. According to Recanati, files for *indexical* expressions contain perceptual information; this constraint *is* useful for a theory such as Lopes's, which construes picture-reference as demonstrative identification.

[5] See notes 2, 6 and 7 for references to these authors.

[6] Kent Bach (*Thought and Reference*, Oxford, 1994) uses a criterion of *relationality* (p. 12) which potentially re-admits causal connectedness (in a way which Evans, for instance, would have objected to). François Recanati, *Direct Reference: from Language to Thought*, Oxford, 1997 (Chapters 6, 7).

[7] François Recanati, 'Singular Thought: in Defense of Acquaintance', forthcoming.

[8] Dominic Lopes, *Understanding Pictures*, Oxford University Press, 1994; pp. 101-107, 140-149.

tion enables what Evans called a 'discriminating thought': a thought such that its object can, if necessary, be discriminated from all other objects of thought. Taken literally, Lopes's theory should be construed as saying that a picture shows us its referent in the way that a demonstrative ('That'), uttered in context, and perhaps accompanied by a pointing gesture, helps us pick out a particular by showing it. If, as required by demonstrative identification, 'showing x' is to mean 'showing x itself' (and not 'showing what x looks like'), then Lopes's theory in effect claims that pictures can place us in a relation of remote acquaintance to their referents.

A remote acquaintance thesis is equally defended for certain pictures by Kendall Walton when he uses the concept of photographic transparency: 'we *see*, quite literally, our dead relatives themselves when we look at photographs of them'.[9] If, when we looked at a photograph, we saw the very particulars photographed, photographs would provide a relation of perceptual acquaintance with particulars, and (at least for any theory which accepts that perceptual acquaintance suffices for singular thought) photograph-perception would cause singular thoughts.

This quick gimpse of the theories suggests a further reason for seeking to go beyond bare causal connections when grounding any claim that pictures cause singular thoughts. The causal account fails to adequately describe the experiences of pictures which are usually evoked in support of the claim that pictures acquaint us with particulars. Walton's transparency thesis would be badly expressed by saying *merely* that the subject has a direct causal link to the depictum; for if this were all that was claimed, then seeing *any* causal relatum of the depictum should count as a case of transparency, and this seems absurd. Something similar applies to Lopes's theory of pictorial reference. Lopes follows Evans in formulating the requisites for his own theory, adopting the constaint (called 'Russell's Principle') that in singular thought we have to know which particular we have in mind. In that case, Lopes must intend his account to be epistemically richer than the bare causal account.

I turn now to my critical assessment of Walton's and Lopes's remote acquaintance theories, starting with Walton's account of the experience

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[9] Kendall Walton, 'Transparent Pictures: On the Nature of Photographic Realism', *Critical Inquiry* 11 (1984): 246-276; p. 252.

of photographic transparency. I will not present the positive alternative I have in mind before §4, so some objections may arise which do not receive their full reply before then.

II. Photographic Transparency and Remote Acquaintance

Kendall Walton's theory of remote acquaintance relies on a concept of transparency which, as it stands, cannot be integrated into the wider debate on the role of perception in *de re* thought. How does that concept — and the concepts of seeing and perception associated with it — square with the concept of perception as an epistemic relation which enables *de re* thought?[10]

Panes of glass are transparent in the sense that we see things — the referents of our perceptual states — through them. In this literal sense, photographs are not transparent but opaque, since they occlude portions of our visual field. So this literal concept of transparency is incompatible with Walton's. Perhaps it could be objected that the two concepts may be reconciled under Richard Wollheim's concept of 'seeing-in', according to which, during picture-perception, we simultaneously see the surface of a picture and see through the surface.[11] But this would still fail to make Walton's concept of transparency compatible with the ordinary concept. If we could both see the surface of a photograph and see through the surface, *what* we would then see through the surface on Walton's concept of transparency would not be what we could see through the surface if it were transparent in the way a pane of glass is. For example, if I am in London looking at a postcard of Naples, on Walton's concept of transparency I will see Naples; but on the ordinary concept of transparency, I should see a portion of London through it. Therefore, for Walton's assertion that 'we see, quite literally, our dead relatives themselves when we look at photographs of them' to be true, we have to set up a new concept of

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[10] I attribute to Kendall Walton the position that photographs are literally transparent, because he writes 'we *see*, quite literally, our dead relatives themselves when we look at photographs of them' (see note 8). But whether Walton uses the term literally or not is secondary to my purpose, which is to identify and disambiguate certain uses of the term 'transparency'.

[11] Richard Wollheim, *Painting as an Art*, Princeton, 1987; p. 46.

transparency — transparency* — alongside the one that applies to panes of glass.[12]

Transparency* would not resemble transparency precisely in respect of its ability to cause singular thoughts. Consider a straightforward case to begin with. Seeing x through a window-pane suffices to justify beliefs about the location of x, but seeing x through* a photograph does not. The perception of a laptop computer through* a catalogue photograph does not allow me to know which of many qualitatively indiscriminable laptops is referred to, but the perception of a laptop through a pane of glass does, because it permits numerical (location-based) discrimination of a particular. More ambiguous examples will be examined shortly, but the simple case already suggests this much: that transparency* fails to cause singular thoughts because unlike transparency, it does not ensure numerical discrimination in space and time. The reason for this has been pointed out by Cohen and Meskin: photographs, despite their informational dependence on particulars, are 'spatially agnostic informants', that is, do not inform us of the location of the object photographed.[13]

The fact that photographs do not convey information about the location of their causal relata is likely to mean that their contribution to singular thought is altogether different from the contribution made by object-perception. To identify the relevant differences, I will isolate two features of ordinary, non-prosthetic perception. First, non-prosthetic perception, being contextual, carries with it a domain-restriction on reference. Secondly, veridical non-prosthetic perception is characterized by a coincidence of the egocentrically represented locations of particulars with

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[12] Note that if transparency was trivialized to mean that when the subject sees the photograph of x she has the *experience* of seeing x, then we would no longer be dealing with a causal relation between a token thought and a particular, but with metaphysical (type) similarity between tokens (a token object-perception and a token photograph-perception), which is a purely attributive, not a referential, matter.

[13] '[...] as I move around the world with the photograph, the egocentric location of the depictum changes, but the photographic image does not.' Jonathan Cohen & Aaron Meskin, 'On the Epistemic Value of Photographs', *Journal of Aesthetics and Art Criticism* 62 (2004): 197-210; p. 201. Cohen and Meskin do not draw from this any conclusion concerning acquaintance-based *de re* thought, so they would not necessarily agree with what I have to say from here on.

their objective locations.[14] I do not claim that prosthetic perceptions can-not have either of these features. Mirror-perception has the former. An illustration (not an instance) of the latter can be found in Magritte's paint-ing 'The Human Condition', in which a painted easel represents the scene it occludes from the viewer. Although I do not claim that prosthetic per-ceptions cannot have any of these features, I *do* claim that a general ac-count of prosthetic perceptions has to be an account which does not pre-suppose their presence. The contents we have in standard veridical cases of picture-perception are not matched by the scene behind the picture-surface, nor are they matched by things in the spatial or temporal context of perception — in the subject's perceptual purview.

The two features are distinct. Domain restriction enables singular thoughts by allowing us to discriminate the object of thought from qual-itatively identical items which are not in our perceptual purview (when both items are in our purview, difference in egocentric locations suffices to distinguish them). Here is an account by Gareth Evans of domain re-striction in perception. Suppose that someone identifies a particular sheep in a flock of sheep on a hillside:

> Despite the fact that the sheep may look pretty much alike to him, the appearance of the relevant sheep may be sufficiently distinctive for him to be able to distinguish it from all the other sheep *in this restricted spatio-temporal setting*. The fact that he could not tell it apart from a sheep across the valley does not prevent him from having a capacity to *re*-identify it — ie, to know when he is confronted with it again. *He would not be considering sheep on the other side of the valley.*[15]

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[14] Throughout, I will use 'egocentric' (eg, 'egocentric location') in the same way as Christopher Peacocke (*A Study of Concepts*, MIT Press, 1992) and Gareth Evans (*The Varieties of Reference*, Oxford, 1982), namely, to describe the fact that perceptual infor-mation is distributed along a system of axes converging at the centre of the perceiving subject's body. The term has also been used in a different way to describe 'information about the location – with respect to viewers of that photograph – of the objects they depict' (Aaron Meskin & Jonathan Cohen, 'Photographs as Evidence', in Scott Walden [Ed.], *Photography and Philosophy: Essays on the Pencil of Nature*, Wiley-Blackwell, 2008; pp. 70-90).

[15] Gareth Evans, *The Varieties of Reference*, Oxford, 1982; p. 280. The last sentence is emphasized by the present author.

According to Evans, appearance-based identification picks out a particular within a domain, but the domain *itself* is picked out from other domains by perception: the perceived space amounts to a *de facto* restriction of the domain of reference. This kind of domain restriction is disabled when we look at pictures. The mental contents caused by pictures usually represent particulars egocentrically as being at locations (behind the picture-surface) which they do not objectively occupy. So when we locate an item egocentrically on the basis of such contents, we have still not located it anywhere in objective space and have no numerical, as opposed to qualitative, guarantee of its identity.

Now, consider mirror-perception in respect of the two features isolated. Mirrors *can* enable domain-restriction, *despite* the fact that in mirror-perception egocentric and objective localization fail to coincide. If Evans's example was modified so that the subject sees the flock of sheep on the hillside through a car mirror, the subject would still be able to apply recognitional abilities jointly with the domain restriction *de facto* imposed by her objective location. Seeing the scene through a mirror is still seeing the portion of space to which reference has been restricted in the initial example. In other words, the fact that objective location and egocentrically represented location now fail to coincide (the sheep is not where I represent it as being on the basis of the contents caused by the mirror) can still be overridden by domain restriction because mirror-perception preserves context.

More complex mirror systems can be devised which do not preserve domain restriction, but first, let's draw a conclusion from the preceding case. Simple mirror-perception is a form of acquaintance with particulars because it enables us to uniquely identify the particulars we see by preserving the domain-restriction present in object-perception. But the *way* in which mirror-perception causes singular thoughts does not simultaneously qualify photograph-perception. Photographs do not qualify because they do not enable a similar contextual restriction of the domain of reference. Therefore, Kendall Walton's comparison of photograph-perception to mirror-perception as a form of remote acquaintance is misleading.

Now to the more complex examples of mirror-perception. Walton holds that if a series of mirrors, the number and arrangement of which is unknown to the viewer, causes a reflection of a carnation, then the sub-

ject will have no knowledge of the carnation's location, but will neverthe-less count as seeing it.[16] Here, everything depends on how the example is set up in certain respects which remain under-specified in Walton's exam-ple. For example, if the subject knows how much space is covered by the mirroring system and knows that that space contains only one carnation, then the example turns out to be irrelevant; the mirror-perception will still cause a singular thought in a way that photographs cannot, namely, by preserving domain restriction. On the other hand, if the subject does not know the extent of the mirroring system, then the comparison between object-perception, mirror-perception and photograph-perception breaks down. Object- perception and mirror-perception are similar in respect of their ability to cause singular thought *only* as long as mirror-perception pre-serves domain-restriction. If photograph- perception is similar to mirror-perceptions which do not preserve domain-restriction, then photograph-perception will still not be like object-perception in the relevant respect (domain restriction) and the capacity to cause singular thought which re-sults from it.

On the same criterion, live video coverage is similar to photography. Suppose that I enter an unfamiliar surveillance room in which live images from several identical stairwells appear on different screens. Each time I look at one of the screens, several locations satisfy my visual contents; any thought I formulate about a stairwell on the basis of my perceptual contents will have the cognitive role of a *de dicto* thought, albeit one with highly determinate descriptive content.[17] Telescopes and microscopes, on the other hand, are unlike photographs and similar to mirroring systems. When we look through a microscope, the egocentrically represented lo-cations of features and particulars do not coincide with their objective locations: features are mentally represented as being closer to the subject

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[16] Kendall Walton, 'On Pictures and Photographs: Objections Answered', in Allen and Smith (Eds), *Film Theory and Philosophy*, Oxford, 1997; pp. 60-75.

[17] In this case, I seem to be in the same epistemic predicament as that described by Perry's example (note 3). Note that I can know which stairwell my contents attach to if I can track the cables connecting the monitors to the cameras. Such knowledge of the *medium* is independent of the perceptual contents caused by the images, reinforcing the point made in §4: that it is beliefs about the numerical identity of pictures as objects that anchors the reference of their *representational* contents.

on the z axis than they are in reality.[18] Yet, this does not prevent reference from being restricted — in this case, to a sub-region of the perceptual context.

I do not propose to further analyze the specificities of each prosthesis, hoping that I have put across my main point by now: for a slippery slope argument to succeed in assimilating picture-perception and object-perception in respect of ability to cause singular thought, the argument would have to maintain that the features of object- perception which enable it to cause singular thoughts are also present in picture- perception. Neither of those features — restriction of the domain of reference, and coincidence of egocentrically represented locations and objective locations — are present in picture-perception, with the exception of contrived ('Magritte') cases from which we cannot generalize, on pain of obtaining a theory which no longer accounts for the standard cases of depiction.

III. Pictures and Perceptual Information Links

Dominic Lopes has developed a theory according to which agentive and non-agentive pictures alike provide remote acquaintance with particulars.[19] The theory applies Evans's theory of demonstrative identification, which is designed for object-perception, to picture-perception. Before assessing Lopes's theory, we need to have a grasp of some of the Evansian concepts it applies.

Evans introduces the concept of an *information link* to designate an ingredient of object- perception which is necessary for the demonstrative identification of particulars.[20] Demonstrative identification requires discriminating knowledge, the subject's 'capacity to distinguish the object of his judgement from all other things'.[21] In this wider picture, information

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[18] The system of axes I have in mind is that described in Peacocke's account of the egocentric nature of perceptual content (*A Study of Concepts*, MIT Press, 1992; p. 62). The z axis passes through the center of the subject's body from back to front.

[19] Dominic Lopes, *Understanding Pictures*, Oxford University Press, 1994; pp. 101-107, 140-149.

[20] Gareth Evans, *The Varieties of Reference*, Oxford, 1982; pp. 144-153.

[21] *The Varieties of Reference*, p. 89. Discriminating knowledge is required for singular thought if singular thought is to comply with 'Russell's Principle', which says that 'in order

links satisfy one of two jointly necessary conditions for perception-based singular thought. They are causal representational connections to particulars which, *in a given context*, permit the discrimination of those particulars numerically as opposed to qualitatively. Such context-relative numerical discrimination is carried out on the basis of the egocentric, or perspectival, mental contents caused by information links — as when we pick out an object by its location and have contents expressible by 'the second item from the right', 'the top shelf', 'the thing behind *that*'. For demonstrative identification not to remain thus restricted to a given perceptual context, the subject has additionally to be able to locate the particulars identified on a non-egocentric, objective, unified representation of space.[22] Yet, the presence of an information link remains a fundamental condition for discriminating knowledge, because it is the information link to particulars that divulges *which* location is to be thus mapped in the first place.

Secondly, according to Evans, information links cause nonconceptual representational contents. Nonconceptuality can be defined negatively as non-possession of concepts for the contents of perception; for instance, as the kinds of perceptual contents possessed by an infant when it perceives objects for which it does not yet have sortal concepts.[23] But nonconceptuality can also be defined in a positive way, as a kind of content with its own characteristics. This typically involves claiming that nonconceptual contents are more fine-grained than conceptual contents, and that this fine-grained content is perception- dependent.[24] Fineness of grain is already implicit in accounts, such as Peacocke's and Evans's, of perceptual

to have a thought about a particular object, you must know which object it is about which you are thinking' (p. 74).

[22] 'The sheer existence of an information link between subject and object does not guarantee the possibility of demonstrative thought about the object' (*The Varieties of Reference*, p. 148). On the non-sufficiency of egocentric localization, see p. 163.

[23] For a more developed negative definition see Tim Crane, *Elements of Mind*, Oxford, 2001, p. 152.

[24] Christopher Peacocke, *A Study of Concepts*, MIT Press, 1992, Chapter 3; Christopher Peacocke, 'Does perception have a nonconceptual content?', *Journal of Philosophy* 98 (2001): 239-264; Jose Luis Bermudez, *The Paradox of Self-Conciousness*, MIT Press, 1998, pp. 50-58; Sean Kelly, 'The nonconceptual content of perceptual experience: situation-dependence and fineness of grain', in Gunther (Ed), *Essays on Nonconceptual Content*, MIT Press, 2003, pp. 223-230; Gareth Evans, *The Varieties of Reference*, Oxford, 1982, pp. 180, 227.

contents as spatially and temporally egocentric. When we locate features on a system of spatial axes, we have a highly determinate representation of their size and shape, including when the shape is irregular. We cannot have such representations conceptually; first, because our conceptual repertoire, being limited by memorization capacities, is not sufficiently rich, and secondly, because we cannot possess prior concepts for everything we perceive.

I turn now to Dominic Lopes's application of Evans's theory to picture-perception. According to Lopes, we demonstratively identify the particulars represented by pictures because we 'single out, on the basis of their contents, the pictures' sources'.[25] This procedure is intended to be compatible with Evans's 'requirement that identifications be well grounded'. Lopes writes:

> As Russell's principle requires, recognition provides discriminating knowledge: recognizing an object, kind of object, or property means being able to distinguish it from all other objects, kinds of object, or properties. I cannot recognize my friend if I cannot distinguish him from other people [...].[26]

It is true that *if* we succeeded in recognizing which particular the depictum was, then we would have a singular thought about the depictum. Yet, it seems to me that the appropriate question to ask, at this point in Lopes's investigation, is *whether* we can in the first place recognize particulars exclusively on the basis of picture-perceptions — whether picture-based identifications can, in Lopes's terms, be well grounded. The kinds of cases Lopes has in mind here are those in which we recognize, in a picture, an individual with which we have prior perceptual acquaintance. So the concept of recognition used is appearance-based identification. On Evans's account, appearance- based identification succeeds only on condition that multiple reference has first been excluded by restricting the domain of reference:

> [...] while a recognitional capacity, as we ordinarily understand it, does require the ability to distinguish an object from all other things,

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[25] Dominic Lopes, *Understanding Pictures*, Oxford University Press, 1994; p. 107.
[26] Domininc Lopes, *Understanding Pictures*, p. 140.

> such a discrimination is made not only on the basis of an object's *appearance*, but also on the basis of its *location*. Indeed, it is precisely what distinguishes individual-recognition from kind-recognition that the former is sensitive to considerations bearing upon the identity of a single object from time to time, and this means sensitive to spatio- temporal considerations.[27]

Since picture-perception of itself gives no information about the location of the depictum in objective space, but only appearance-based, qualitative information, there should be no epistemic resources left with which to exclude multiple reference and discharge Russell's Principle.

To bring out this difference fully, consider the following case. Suppose that a very small fragment is cut out of a photograph and shown to me. The fragment is so small that I can obtain no qualitative information from it (perhaps not even a colour concept). The mini- photograph can divulge no information about which portion of space it refers to, with the result that I can know just two things about the referring ingredient of my thought: (a) my thought refers to *something*, (b) *anything* (any portion of space, any part of any particular) could be its referent. Compare this with the equivalent situation in object- perception. If I pick out any point of my visual field, such as a point on the floor, I know at least two things about the content of my perception: (a) I know that it refers to *something*, (b) I know *what* it refers to — it refers to *this*, which is distinct from *that* over there, and from any point anywhere else. What the example shows is that while object- perception secures the necessary condition for a singular thought without the help of any attributive contents, picture-perception does not. In object-perception, the information link to particulars *de facto* ensures spatial, and therefore numerical, discrimination, while in picture-perception this link is broken, and we have to identify referents by some other means. Those other means must be appearance-based, since when they are unavailable, as in the case of the minimal photograph, we cannot secure reference at all just by perceiving the photograph.

So there is no information link — no representational connection capable of grounding the subject's knowledge of the location and numerical identity of particulars — between the subject and the picture's *contents*

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[27] Gareth Evans, *The Varieties of Reference*, p. 278.

(what the picture represents). There is only an information link between the subject and the picture as an *object*. Russell's Principle, the requirement that in singular thought we know which particular we are thinking of, is not satisfied by thoughts whose contents are determined wholly by picture-perceptions. The identity of a particular may be divulged by the title of a picture (with a proper name), by biographical data I possess about a painter, and by knowledge of the causal history of a picture (especially when I have produced the picture myself). But in those cases, the identity of the particular is not given *pictorially*: it is given linguistically or by prior beliefs about the depictum and about the picture as an object.

It remains that the contents caused by picture-perceptions resemble those caused by object-perceptions in respect of the *second* trait of information links enumerated further up: the contents are nonconceptual, perception-dependent (dependent on perception of the picture-surface), and spatially egocentric (distributed along a system of axes converging at the centre of the perceiving subject's body). I propose now to treat these nonconceptual, perspectival, and perception-dependent mental contents as fundamentally attributive and incomplete — to claim, in other words, that while pictures are not suitable devices for providing the referential parts of thoughts, they are excellent devices for providing the attributive parts of thoughts whose reference is fixed independently.

IV. Pictures and Indexical Predication

Pictures which are causally related to their depicta are not always used to refer to those depicta. Consider a photograph in a commercial catalogue. The photograph has one particular as a causal relatum, yet it is used to convey descriptive information about all particulars indiscriminable from the causal relatum in respect of certain properties (shape, colour and aesthetic attributes). One way to describe the use of such a picture would be to say that it is not used to refer to a particular, but to denote all the members in a set of objects, where appurtenance of an object to the set is determined by the object's possession of certain properties. In that case, the representational function is fundamentally attributive, not referential.

Alternatively, it may be held that the picture *exemplifies* certain properties. According to Goodman, for a representation to exemplify, it has to

instantiate some property of its referent; for instance, a colour swatch (i) denotes a particular quantity of cloth, and (ii) instantiates the same colour as that cloth.[28] The photograph in a prospectus may be understood as an exemplification on condition that the properties exemplified are phenomenal or appearance properties, such as phenomenal shapes and colours.[29] Note, however, that exemplification can aso be used to refer to properties without denoting particulars. A colour swatch can be used to pick out a colour from the property space of colours without being used to make any claim about the possession of that colour by any particular *other* than the swatch. Similarly, an architect can draw perspectives of unconstructed buildings to see how they would look in certain surroundings; in that case, she samples the appearances of the buildings without denoting any building.

Now, consider a *referential* use of a picture. Suppose that I photograph one of two identical twins, knowing which of the twins it is that I am photographing, and subsequently look at the photograph. By supposition, the depictum cannot be discriminated from its indiscernible twin on the basis of appearances alone. Yet, I have a singular thought about the causal relatum because I know *independently of the picture-contents* which particular the photograph represents. My thought will satisfy not only the relational requirement for singular thought, but also the epistemic requirements imposed by acquaintance theories and pertaining to numerical discrimination. However, what anchors the representational contents of the photograph to a particular in thought is the perception of the photograph as an object, not its perception as a representation. If I did not have knowledge of the picture's causal history, I would not know which mental file (that for twin A or that for twin B) to feed the perceptual-style information into.[30]

Together, these two uses of pictures — referring uses and descriptive uses — suggest that pictures can be *parts* of representational connections

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[28] Nelson Goodman, *Languages of Art*, Indianapolis: Hackett, 1976; pp. 52-56.

[29] This issue is dealt with at length below. The condition is required because pictures share with their denotata neither kind-properties, nor any properties which determine three-dimensionality.

[30] I use the idea that we have mental files for particulars in the way outlined in note 4. The idea is initially Grice's (who calls them 'dossiers').

to particulars, by combining with other forms of representation such as beliefs and utterances. Pictures are frequently accompanied by utterances such as these:

(1) This [showing a photograph] is the house.
(2) Here [showing a photograph] is the house.

If the indexicals in (1) and (2) were understood as demonstrating the referent of the photograph, their use would turn out to be bogus. (2) cannot be paraphrased as 'The house is here [showing photograph]', as would be the case if 'Here' was a genuine indexical. 'This' designates the photograph, not its referent; and neither utterance allows contextual identification of the house, although the point of using indexicals is precisely to secure such identification. Nor would the *character* of the indexicals be preserved if they were so interpreted. Independently of their token-reflexive and variable meanings in utterances, indexicals have an invariable form of meaning — they designate particulars or events which are within the perceptual or introspective purview of the speaker. This character of the indexicals would not be preserved if they were interpreted as demonstrating the referent of the photograph, and for a relevant reason: when objects are within our perceptual purview we can be acquainted with them *directly* by perception, and do not need to be informed of them *remotely* by pictures.

Since the indexicals cannot be used here to pick out the referent of the photograph, what is their function in the sentences? I suggest that their occurrence in (1) and (2) can be compared to the occurrence of 'This' in:

(3) This [showing a spanner] is the shape of his nose.

The sample in (3) is a three-dimensional object, while pictures are two-dimensional. My immediate purpose here is to isolate the structure of thoughts whose predicational component contains a sample. Once this is done, I will apply the structure to cases where the samples are pictures, by holding that pictures exemplify appearance properties.

The demonstrative 'This' as it occurs in (3) performs two functions. Its principal function is to refer to a property or type; in the occurrence, a determinate shape. We can call this reference to a property its *exemplifying* function. But for the exemplification to be carried out, the demonstrative

has first to pick out a particular instance of the shape to be exemplified. Thus, in (3), 'this' picks out a particular which instantiates the shape to be exemplified, and the predicate 'shape' picks out the respect in which the particular exemplifies; it exemplifies shape but not, for instance, colour or size. So, together, the linguistic expressions and the demonstrated particular form an exemplification of a determinate shape property. That property is then attributed to another particular (the referent of 'his nose'). This permits the following paraphrase of (3):

(3') His nose is this shape [showing a spanner].

in which the demonstrative, 'this', does not secure the reference of the sentence as a whole, but instead belongs to the attributive part of the sentence, serving the purposes of property-attribution by exemplification. The referent of the sentence as a whole is given by the linguistic 'His nose'. In (3'), the shape exemplified is three-dimensional and can be instantiated by the sentence's referent; as it stands, the proposal is an outline for explaining how sculptures or other three-dimensional models, but not pictures, are used to contribute to our beliefs about which properties a particular instantiates.

Exemplification raises a number of important metaphysical issues. Some of them do not need not be addressed here, but there is at least one that has to be dealt with before we can go any further: What kind of metaphysical similarity should be required between sample and referent in exemplifications? In (3'), the shape of the sample (the spanner) is likely not to be qualitatively *identical* to the shape instantiated by the referent (the nose). To use a more precise vocabulary, it is likely that the two objects are identical under a determinable shape, but that there are more determinate shapes they do not share.[31] Sometimes, sample and referent are not qualitatively identical for contingent reasons, such as the unavailability of more representative samples. But there are cases where qualitative identity cannot be ensured for more substantial reasons. Suppose that we

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[31] Properties are determinable or determinate relative to other properties: being red is a determinate way of being coloured, but being red is itself also a determinable property, since there are many ways of being red (being scarlet, crimson, etc). On the determination relation, see Eric Funkhouser, 'The determinable-determinate relation', *Noûs* 40.3 (2006): 548-569.

required that samples and referents instantiate *identical* objective properties. In that case, even the richest range of phenomenally discriminable colour chips would not suffice to provide the right colour samples, since there are more objective colours than phenomenal colours. For the metaphysical requirement to permit practice in the first place, we should drop either identity or objectivity. If *identity* is dropped, the qualitative similarity relation will be weaker, and sample and referent will merely come under the same determinable objective property. If, on the other hand, the *objectivity* requirement is dropped, then we could still maintain strict identity on condition that it was identity in respect of *phenomenal* properties.[32] I suggest that for the needs of a *general* account of exemplification, the best option is to drop *both* requirements: the sample and referent can simply have different properties coming under the same determinable property, whether objective or phenomenal, and it is this determinable that is exemplified. Several considerations support this choice; here are two of them. First, even under this looser option, exemplification remains a very useful supplement to verbal descriptions. Our purely verbal resources are extremely limited when it comes to describing colours, sizes, and especially shapes; any form of representation which cuts finer than general linguistic predicates is a welcome addition to those resources. Secondly, as Dominic Lopes has pointed out in the case of pictures, representations can have varying degrees of representational commitment.[33] Using Goodman's terminology, we could say that the less semantically replete a representation is, the less determinate are the properties represented. Therefore, if exemplification is to work for representations in general, it should not be committed to sampling only determinate properties.

Having adopted the widest concept of exemplification — according to which sample and referent need share only a determinable property, which

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[32]Further dilemmas arise here. It has been argued by Austen Clark ('The Particulate Instantiation of Homogeneous Pink', *Synthese* 80.2 [1989]: 277-304) that there are indiscriminable differences between phenomenal properties. A similar position is held by Goodman in The Structure of Appearance. Even on these positions, some definition of phenomenal types remains acceptable; this will have to suffice for present purposes. For more clarification on these issues, see John Zeimbekis, 'Phenomenal and objective size', *Noûs* 43.2 (2009): 346-362.

[33] Dominic Lopes, *Understanding Pictures*, Oxford University Press, 1994; Chapter 6.

can be either objective or phenomenal — we can now ask whether the proposal concerning exemplification can be applied to pictures. If pictures are samples, they are *two*-dimensional samples. Does this mean that they can only serve to exemplify properties of two-dimensional particulars?

The same question has been asked many times before in a different guise, by using the concept of resemblance: 'How can pictures represent by virtue of resemblance, since, being two-dimensional, they cannot resemble the three-dimensional objects they represent?'[34] This question has forced us to admit that if there is any resemblance involved in depiction, it holds between the *perceptions* of pictures and the *perceptions* of three-dimensional objects. The resulting concept of perceptual resemblance is common to both recognition theories and resemblance theories of depiction. Thus, Robert Hopkins uses the concept of 'experienced resemblance', which relies on the phenomenal concept of outline shape.[35] For Gombrich, perceiving a picture of an F triggers perceptual and cognitive effects similar to those triggered by perceiving an F; a position that Lopes extends to the recognition of particulars, and develops by using the concept of aspect-recognition. A recognition-based theory has also been presented by Peacocke, who holds that pictures and sortal concepts are related by visual field shape.[36]

A similar reply is available to the question about pictures and exemplification: pictures cannot exemplify objective properties, but they can exemplify phenomenal properties. A phenomenal property is, 'very roughly, a characteristic of sensible appearance: a quality that qualifies how things *appear*'.[37] The description is only a rough one because it covers what Sydney Shoemaker calls the phenomenal character of experience, as well as its representational content.[38] Consider phenomenal, or apparent, shapes.

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[34] See, for instance, Nelson Goodman, *Languages of Art*, Indianapolis: Hackett, 1976; pp. 4-5.

[35] Robert Hopkins, *Picture, Image, and Experience*, Cambridge, 1998.

[36] Christopher Peacocke, 'Depiction', *Philosophical Review* 96 (1987): 383-410; pp. 386-7. This is intended as a brief, neutral outline of the main perceptualist options. I believe that recognition theories are on the right track, and that a concept of recognition is also a requirement for what Hopkins calls experienced *resemblance*.

[37] Austen Clark, 'Phenomenal properties: some models from psychology and philosophy', *Philosophical Issues* 18.1 (2008): 406-425; p. 406.

[38] Sydney Shoemaker, 'Self-Knowledge and "Inner Sense". Lecture III: The Phenom-

The shape an object seems to have when we see it is not the shape of its visual field occlusion or occupation (eg, an oval shape for a coin), but the shape that we represent the object as having (a circle). The distinction between content and character is applied to pictures by Peacocke, when he distinguishes 'experienced shape in the visual field and experienced physical shape'.[39] John Kulvicki makes the same point when he distinguishes the 'bare bones content' of pictures — a form of content which makes no commitment beyond phenomenal character — from their 'fleshed out content', which is their representational content.[40] Henceforth, when I use the term 'phenomenal property', I will use it to refer to perceptual appearances in the full-blown sense of representational contents.

Although the objective properties of three-dimensional objects cannot be exemplified by pictures, their phenomenal properties can. Imagine a drawing of a scene which contains a rectangular tabletop. The part of the picture which represents the tabletop is an irregular trapezoidal arrangement of ink on a sheet of paper. The relevant part of the drawing is not a rectangle and does not exemplify a rectangle. But the picture does have a phenomenal property in common with the tabletop, namely, its phenomenal shape: it causes a mental representation of a rectangular shape in three-dimensional space.[41] In that case, we can say that the picture's phenomenal properties exemplify some of the scene's phenomenal properties. We can also legitimately adopt a simpler formulation — 'the picture exemplifies some of the scene's properties' — since it is also true to say that the picture and the scene *share* certain properties, namely, some of their appearances.

With these issues of exemplification, phenomenal properties, and perceptualism in depiction finally behind us, we can now return to the main task and give a paraphrase for utterances indexed to pictures. (1) can be paraphrased as follows:

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enal Character of Experience', *Philosophy and Phenomenological Research* 54.2 (1994): 291-314; p. 296.

[39] 'Depiction', *Philosophical Review* 96 (1987): 383-410; p. 385. Peacocke makes a similar distinction in *Sense and Content*.

[40] John Kulvicki, *On Images: their Structure and Content*, Oxford, 2006; Chapters 6, 9.

[41] The following are true of both the tabletop and the relevant part of the picture: they occupy a trapezoidal region of the visual field; *and* they cause a mental representation of a rectangle in three-dimensional space.

(1) This [showing a photograph] is the house.
(1') The house is like this [showing photograph].

I suggest that (1') expresses the kind of thought we effectively have when we are shown a picture for informative purposes. The demonstrative 'this', used in application to the photograph, does not identify the res of my thought or my resulting belief; that is done by the referent of the sentence's referring expression, 'The house'. Rather than identifying the *res* as ordinary demonstratives do, 'this' identifies the *properties* of the referent. The sentence is open at the attributive end, and is completed by the picture, allowing us to attribute to the referent of the sentence properties which cannot be represented by linguistic means alone. Exemplification is required because no combination of linguistic predicates and adverbial modifications is capable of expressing the determinate shapes to be attributed. Instead, instances of the properties are produced and shown. Since the relevant properties of the referent are phenomenal ones, we may also say that the picture *acquaints* us with them.[42]

It seems, then, that utterances such as (1) and (3) use pictures to acquaint us with properties as opposed to particulars, and amount to a form of indexical predication, to use the term coined by Jane Heal.[43] Heal does not deal with the kinds of cases examined here (which seek to explain how representations such as pictures, models or sculptures are used to complete linguistic utterances) and does not make the same use of the concept of exemplification. However, she holds that the predicative components of utterances can be indexically tied to contexts which provide part of their predicational value; for example: '"John sang thus", said while indicating someone singing discordantly, claims that John sang discordantly'.[44] The idea of indexical predication is still under examination and has received relatively little attention. The cases discussed here offer it considerable support. They allow us to separate the concept of indexicality from that of

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[42] To what extent knowledge of a particular's phenomenal properties suffices to cause beliefs about *objective* properties is a matter that cannot be dealt with here. Suffice it to say that during object-perception, knowledge of the objective properties of particulars also comes from phenomenal data (even if the data is multi-modal, more stereoscopic, and generally more dynamic than that gleaned from pictures).

[43] Jane Heal, 'Indexical predicates and their uses', *Mind* 106 (1997): 619-640.

[44] Jane Heal, 'Indexical predicates and their uses', p. 619.

reference to particulars, in a way that the study of object-perception does not. During object-perception, perception-dependent contents are caused by particulars which can be demonstratively identified for the kinds of reasons pointed out by Evans. Pictures, however, standardly cause perception-dependent contents which are not *de re*. The concept of indexical predication captures the structure of such thoughts, and applies naturally to depiction and to other forms of non-linguistic representation. But once it is admitted, there seems no reason to deny that it applies in the same way when we use ready-made particulars to sample properties and complete our thoughts and utterances.