

## THREE DEPICTIVE VIEWS DEFENDED

John Dilworth

I defend a 'twofoldness' thesis as to the inseparability of the perception of a picture and the perception of its subject matter, making use of a recently developed 'interpretive' theory of pictorial representation, according to which a picture is *represented by* its physical vehicle, so that a picture is itself part of the *representational content* of the vehicle—which picture in turn interpretively represents its subject matter. I also show how Richard Wollheim's own twofoldness thesis, along with related views of his, might be vindicated by reinterpretation along similar lines, and conclude by showing that Ernst Gombrich too may be protected from some standard criticisms of his views—which views are also consistent with those of Wollheim as thus reinterpreted.

ERNST Gombrich and Richard Wollheim have what seem to be diametrically opposed views on some central issues concerning pictorial representation or depiction.<sup>1</sup> Also, it is commonly thought that both of their views are vulnerable to various damaging criticisms—or at least that their views are significantly incomplete as they stand.

In such a theoretical situation, an optimum solution for all concerned might involve coming up with a more comprehensive theory that would preserve some of the most central insights of each writer, show that their views are, after appropriate adjustments, compatible with each other after all, and also show that the (appropriately amended or reinterpreted) versions are no longer vulnerable to the usual criticisms. In such a way one might hope both to vindicate some central insights of Gombrich and Wollheim on depiction, and also in so doing help to defend in turn the more comprehensive theory, which thus attempts, among other things, to reinterpret or reinvigorate some of the work of these two important theorists.

I believe that this admittedly optimistic-sounding scenario is in fact actually realizable. In this paper I shall make a start on realizing it in the following way. I shall summarize a recently developed '*interpretive*' theory of depiction<sup>2</sup> that has the

---

<sup>1</sup> E. H. Gombrich, *Art and Illusion; A Study in the Psychology of Pictorial Representation*, 2d edn (London: Phaidon Press, 1962); Richard Wollheim, *Painting as an Art* (Princeton, NJ: Princeton U.P., 1987), hereafter *PA*.

<sup>2</sup> See my paper 'A Representational Theory of Artefacts and Artworks', *British Journal of Aesthetics*, vol. 41, no. 4 (October 2001), pp. 353–370, and also 'Medium, Subject Matter and Representation', submitted for publication. The following summary in Section I draws most directly on this latter

stronger conceptual resources required for a more comprehensive theory of depiction, and then I shall carry out, to the extent that space permits, the outlined vindications.

#### I. A SUMMARY OF AN INTERPRETIVE THEORY OF DEPICTION

In the case of representational or depictive pictures,<sup>3</sup> artists working with traditional media<sup>4</sup> typically create their pictures by engaging in *expressive acts*, which acts involve the *application* of medium-specific variegated marks, lines, brushstrokes, or layers of pigment to an appropriate surface, in order to *express* their intentions<sup>5</sup> and style with respect to their chosen subject matter using their chosen medium.

However, I argue that those physical marks, and so on, cannot themselves *be* the artist's expression, since they are a mere *record* or *trace* of those expressive acts. Nevertheless, those physical marks can, as an artistically *complete* record of those acts, serve to *represent* those acts—which acts express the intentions and style of the artist with respect to her subject matter.

In this manner I argue that there is a kind of *expressive representational content* associated with a picture that is *distinct from* its subject matter (or 'subject content'). I also argue that this kind of expressive content is closely associated with the *specific artistic medium* chosen by the artist as her expressive medium, for which reason I call this kind of content *medium content* (or *medium-related content*).

Thus, as far as an artist's *use* of a medium is concerned, the medium, *as thus used* in expressive acts, is distinct from the corresponding *physical materials* associated

---

paper. I also refer here to another paper of mine, 'Varieties of Visual Representation', forthcoming in the *Canadian Journal of Philosophy*, vol. 32, no. 2 (June 2002), for distinctions between depiction (pictorial representation) and other kinds of visual representation.

Further evidence of the non-physicality of pictures is presented in my paper 'Four Theories of Inversion in Art and Music', *Southern Journal of Philosophy*, vol. 40, no. 1 (Spring 2002), pp. 1–19. And I have extended my general representational approach to the nature of visual artworks to literary works such as plays in two papers: 'Theater, Representation, Types and Interpretation', *American Philosophical Quarterly*, vol. 39, no. 2 (April 2002), pp. 197–209, and 'The Fictionality of Plays', forthcoming in *Journal of Aesthetics and Art Criticism*, vol. 60, no. 3 (Summer 2002).

<sup>3</sup> I use the terms 'representational' or 'depictive' broadly, to cover any cases in which a picture has some *subject matter*, even if that subject matter is 'abstract' in not being readily recognizable as some familiar kind of object or person, etc. This usage roughly corresponds to Wollheim's broad term 'representation', and I too would reserve the term 'figurative' for the narrower subclass of readily recognizable things as just described. See Wollheim, *PA*, p. 21. Also, even with figurative representations, their *subject matter*, or 'representational content', should be distinguished from their 'actual subject' (if any), for some pictures are simply of 'a man' rather than of some particular actual man (on which see Wollheim, *ibid.*, pp. 67–71).

<sup>4</sup> My account can also handle non-traditional media such as photography: see my 'Medium, Subject Matter and Representation'.

<sup>5</sup> A term I use broadly, as does Wollheim in *PA*, p. 86: 'Intention must be understood so as to include thoughts, beliefs, memories, and, in particular, emotions and feelings, that the artist had and that, specifically, caused him to paint as he did.'

with the medium, which on my account serve rather to *represent* the artist's expressive use of the medium—that is, they serve to represent the relevant *medium content*.

I further argue that medium content is distinguished from subject matter by the differing *functional roles* that each plays in a picture. Medium content, broadly speaking, expresses an artist's *interpretation of*, or *commentary on*, the subject matter of the picture, while correspondingly the subject matter or 'subject content' functions as *that which is* interpreted or commented on by the medium content.

As for the nature and identity of a picture itself, I first argue that the medium content in a picture itself *represents* its subject matter, and then argue that a theoretical simplification is needed, in which a picture is *identified with* its medium content. Thus an overall interpretive theory results in which a physical artefact, such as a physical painting, represents the picture itself—which picture is an organized collection of medium content—and which picture then in turn *inter-pretively represents* its subject matter.<sup>6</sup>

## II. WOLLHEIM AND TWOFOLDNESS

I shall now begin to relate the theoretical results as just summarized to some closely connected issues in the literature on depiction. As a useful point of entry into the relevant literature on this topic, there are a series of contentious issues arising in the work of Richard Wollheim on pictorial depiction. As is well known, Wollheim uses a distinction between the 'configurational' and 'recognitional' aspects of a picture to give an analysis of pictorial depiction in terms of 'seeing-in', which in his view entails 'twofoldness', or a conscious attention on the part of a viewer, in a single act of seeing, to both configurational (or object-related) and recognitional (content or subject matter-related) aspects of a picture.<sup>7</sup>

However, Wollheim's claims regarding 'seeing-in' and twofoldness have been much criticized.<sup>8</sup> Nevertheless, Wollheim's distinction of 'configurational' from

<sup>6</sup> In my paper 'Varieties of Visual Representation' I argue that the two kinds of representation are distinct.

<sup>7</sup> Thus in Wollheim's later account of twofoldness, as found in *PA*, p. 46, he says 'The two things that happen . . . are, it must be stressed, two aspects of a single experience that I have, and the two aspects are distinguishable but also inseparable.' Wollheim also summarizes his earlier, different account of twofoldness, and his reasons for changing it, in *ibid.*, p. 360, n. 6.

<sup>8</sup> For example, by Malcolm Budd in 'On Looking at a Picture', in Jim Hopkins and Anthony Savile (eds), *Psychoanalysis, Mind and Art: Perspectives on Richard Wollheim* (Oxford: Blackwell, 1992), and Dominic Lopes, *Understanding Pictures* (Oxford: Oxford U.P., 1996), pp. 43–51. Patrick Maynard provides a useful summary of many different points of view on these topics in his paper 'Seeing Double', *Journal of Aesthetics and Art Criticism*, vol. 52, no. 2 (1994), pp. 155–167. See also the symposium on Wollheim's work with contributions by Richard Wollheim, 'On Pictorial Representation', *Journal of Aesthetics and Art Criticism*, vol. 56, no. 3 (1998), pp. 217–226; Jerrold Levinson, 'Wollheim on Pictorial Representation', *Journal of Aesthetics and Art Criticism*, vol. 56, no. 3 (Summer 1998), pp. 227–233; and Susan Feagin, 'Presentation and Representation', *Journal of Aesthetics and Art Criticism*, vol. 56, no. 3 (1998), pp. 234–240.

'recognitionally' 'objects' of seeing, in terms of which he articulates his claim of twofoldness, is widely accepted, including by those who reject or significantly modify his claims concerning twofoldness.<sup>9</sup>

However, I shall argue that Wollheim's critics have, in effect, picked on the wrong target—in criticizing twofoldness rather than the configurational/recognitionally distinction, that is. For in my view, a suitably modified and rehabilitated twofoldness thesis is indeed a central feature of a good theory of pictorial depiction; but at the same time, the widely accepted configurational versus recognitionally distinction itself, understood as a distinction between 'objects' of sight rather than between two aspects of the *phenomenology* of seeing such 'objects', should be abandoned—or, at least, significantly supplemented by the introduction of a third fundamental element or factor.

Let me explain. I shall claim that, instead of a configurational (or material object) versus recognitionally (or subject matter) distinction, we in fact need a *tripartite* distinction between configuration, *medium* and subject matter—and that twofoldness involves, not *configuration* and subject matter, but instead *medium* and subject matter.

Furthermore, I claim that a relevant concept of 'medium' as distinguished from 'configuration' is itself available, in embryo form, in Wollheim's own writings, so that the seeds for restoration of an adequate concept of twofoldness are available to him within his own overall theoretical framework.<sup>10</sup>

For Wollheim himself distinguishes the configuration (or materials) of painting from the *medium* of painting, in discussing what he calls 'thematization',<sup>11</sup> as follows: 'Thematization belongs to an instrumental, or means-end, way of using the materials of painting, and it is this imposition of an end upon the materials that converts them into a medium' (*PA*, p. 21). Then a little later he says, regarding the general ends of thematization, that '... the broadest obtainable formula is this: the acquisition of *content* or *meaning*. Thematization is by and large pursued so as to endow the resultant surface with meaning' (*PA*, p. 22). Thus here is already the germ of an idea here that thematization, by imposing ends on the *materials* of painting, converts them into a *medium* that, unlike the materials themselves, acquires, or is endowed with, *content* or *meaning*.

However, he also says, in describing the major two parts of his work in the book, that

<sup>9</sup> For example, Lopes, *Understanding Pictures*, pp. 43–51, who makes a similar distinction of (physical) design properties from representational content.

<sup>10</sup> Which is not to say that I regard his 'seeing-in' theory itself as ultimately being defensible, given the many effective criticisms of it such as are noted above.

<sup>11</sup> Which he defines as follows: 'For this process by which the agent abstracts some hitherto unconsidered, hence unintentional, aspect of what he is doing or what he is working on, and makes the thought of this feature contribute to guiding his future activity, I use the term "thematization"' (*PA*, p. 20).

One part is dedicated to the medium of painting, the other part to meaning in painting. There must be an account of how the brute materials of painting are converted into a medium, and there must be an account of how the medium is used to generate meaning and of the different varieties of meaning in which this can issue. (*PA*, p. 23)

And also: 'Thematization arises out of the agent's attempt to organize an inherently inert material so that it will become serviceable for the carriage of meaning' (*PA*, p. 25).

The first of these two quotations says that a medium, unlike the 'brute materials' of painting, can be used to *generate* meaning, while the second implies that a medium—unlike the 'inherently inert material' from which it is organized—will, after 'organization', become capable of *carrying* meaning.

Thus overall, three related claims regarding the meaning-relatedness of a medium can be extracted from these passages: that a medium in some way *has* meaning or content, or that it *generates* meaning, or that it is capable of *carrying* meaning. And second, all three quotations distinguish a meaning-related *medium* from the 'inert' or 'brute' *materials* of painting, which by implication are not meaning-related in any way (and hence are neither meaningful themselves, nor capable of generating or carrying meaning).<sup>12</sup>

I think that these little-noticed passages are remarkable in their implications. For if we assume that by 'configurational' objects Wollheim is indeed referring to the *materials* rather than the *medium* of painting, as seems clear from some of his descriptions of configurational items as 'marks', 'differentiated surfaces', and so on,<sup>13</sup> then these very passages seem to doom his own 'configurational plus recognitional' account of twofoldness to incoherence and failure. For if configurations or configurational objects—as 'inert' or 'brute' *materials*—are inherently unable to have, generate or carry meaning, then how can they be an inseparable part of a twofold whole, whose only other part is itself a recognizable content or meaning, which could only (*per impossibile*) be had, generated or carried by those same meaningless configurational objects?

However, at the same time Wollheim clearly also wants to use his configurational versus recognitional distinction as a distinction between two *aspects* of a single, special twofold *visual phenomenology*, each aspect of which experience is such that it is incommensurate with a 'face-to-face' visual experience of its corresponding object or subject matter.<sup>14</sup>

<sup>12</sup> Michael Podro has made similar points more emphatically, for example in 'Review of Wollheim, *Art and Its Objects*, 2nd. Ed.', *Burlington Magazine*, vol. 124, no. 947 (February 1982), pp. 100–102, and 'Depiction and the Golden Calf', in Andrew Harrison (ed.), *Philosophy and the Visual Arts: Seeing and Abstracting* (Dordrecht: D. Reidel, 1987).

<sup>13</sup> Also see his discussion of Gombrich in *PA*, p. 360, n. 6, where he likens his recognitional/configurational distinction to Gombrich's nature/canvas dichotomy.

<sup>14</sup> For example, he says 'We get lost once we start comparing the phenomenology of our perception of the boy when we see him in the wall, or the phenomenology of our perception of the wall when we see the boy in it, with that of our perception of boy or wall seen face-to-face' (*PA*, p. 46).

I suggest that the best way to make sense of this is to postulate that the relevant 'objects of sight' are *different* in each case, so that a *reformed* 'configurational' aspect would have as its seen 'object' some *medium content*—for example, some wall-like content—that is distinct from the *physical* wall that is the 'object of sight' when it is seen 'face-to-face'.<sup>15</sup>

Thus it seems clear that a rehabilitation program for Wollheim's twofoldness claim must adopt as its necessary initial goal the replacement of *configurational materials* with *medium* (or *medium-related*) items, since they, and only they, are capable of appropriately supporting or carrying recognitional contents or meanings so as to restore the twofoldness claim to at least a minimal logical health.

I shall carry out the rehabilitation plan, and hence vindicate a form of Wollheim's twofoldness claim, after integrating my theory (as summarized in Section I) with Wollheim's views on the 'material versus medium' distinction.

### III. MEDIUM CONTENT AND 'A MEDIUM'

To summarize where we have arrived at, it seems clear from the discussion of Wollheim in the previous section that the concept of the *medium* of painting, as embryonically used by Wollheim, is itself one that in some way involves meaning or content, and which concept is to be distinguished from concepts applying only to the corresponding physical configurational materials, which are not content-involving.

I shall now provide some integration of that point with my points summarized in the first section regarding the materials and medium of painting, their connections with what I called '*medium content*' (or medium-related content), and the issue of picture identity.

First, I argued that medium content is *represented* by a physical painting, and that content could also be described as '*expressive content*', since in typical cases the physical painting represents, as part of its medium content, the expressive activities of its artist, including her intentions and style with respect to the subject matter.

Compare that view with my initial summary of Wollheim's view, namely that thematization, by imposing ends on the *materials* of painting, converts them into a *medium* that, unlike the materials themselves, acquires, or is endowed with, *content* or *meaning*.<sup>16</sup>

It seems clear that our ideas are fairly closely related, and therefore suitable candidates for inclusion in a more integrated view. Wollheim's 'thematization' is arguably already included in my broad concept of an artist's intentions.<sup>17</sup> The

<sup>15</sup> For as Budd points out in 'On Looking at a Picture', p. 272, because of the claimed incommensurability, the configurational aspect cannot simply be seeing of the 'face-to-face' physical surface—so it is either nothing (his suggestion), or it requires reinterpretation along some such lines as mine.

<sup>16</sup> See the previous section.

<sup>17</sup> As seems clear from its definition (see note 11 above).

main difference between our views seems to be that my concept of ‘medium content’ is specifically tailored to define the (medium-related) represented content of *a particular painting* as created by a given artist, whereas Wollheim’s invocation of ‘*a medium*’ of painting is a much more generalized concept, more tailored to explaining how an *indefinite number* of works in a given medium acquired their meaning.

I can make this connection more precise as follows. I have argued that a picture or artwork, as distinguished from a physical painting, is itself a content-like entity, which is entirely made up of the medium content associated with a given physical painting. On this view, a painterly artwork is an *organized collection of medium content*. However, Wollheim’s concept of ‘*a medium*’ is a much more indefinite concept, in that it, in my view, deals with all of the possible ways in which any of the physical materials associated with painting could be used so as to represent any *medium content* whatsoever.

Thus in my view Wollheim’s concept is about how any (in themselves meaningless) physical painterly materials could be used so as to represent *some* meaningful medium content—whether or not that content is sufficiently organized so as to define a specific artwork—and thereby render meaningful ‘*a medium*’, viewed as the sum total of all possible such representational uses of physical painterly materials.

Now recall my view of picture identity (as summarized in Section I), according to which a picture<sup>18</sup> is not a physical object, such as a physical stretched canvas, but instead it is itself one kind of *representational content* associated with such a stretched canvas. On this view, pictorial representation<sup>19</sup> involves not one but *two* stages of representation—in the first of which a physical vehicle represents a picture, and in the second of which that picture in turn represents its own subject matter or subject content.

Thus, on this depictive theory there are not just *two* distinct items—a physical object, and the subject matter or subject content it represents—but instead *three* distinct items involved in cases of depiction or pictorial representation, namely a physical object, the picture represented by it, and the subject matter represented in turn by the picture. And it is for this reason, among others, that I would claim that Wollheim’s two-item configurational versus recognitional distinction is inadequate.

Since, however, a picture is itself an organized collection of medium content on my view, another way to make the threefold distinction is to distinguish material object, from medium content, from subject matter.

However, there are some complexities unaccounted for by that simple

<sup>18</sup> I use the term ‘picture’ rather than ‘painting’ so as not to confuse a physical painting with the picture that (on my view) is represented by the physical painting.

<sup>19</sup> As opposed to other kinds, as distinguished in my paper ‘Varieties of Visual Representation’. See also the discussion of *trompe l’oeil* representations in Section V.

distinction, due to the differences between ‘a picture’ (a substantive or object-like concept) and medium content on the one hand, and between a physical object and configurational items on the other hand, which will now be discussed.

To begin with, both the concept of a physical object, and of a picture, are sortal or entity-like concepts that have a class of objects as their extensions. However, the concept of the ‘material’ or configuration associated with a physical object is instead either a *qualitative* term (in that an object *has* a shape or configuration, rather than itself *being* (identical with) a shape), or alternatively it functions as picking out various salient physical *parts* of an object (such as the physical clumps of paint or charcoal that physically *constitute* the marks on the surface of a some particular physical canvas). Thus ‘configurational’ information covers both qualitative configurations, and also physical parts or ‘materials’ such as marks or clumps of paint.<sup>20</sup>

Given these qualitative or part-like features of the materials or configuration of a physical painting, an appropriately adjusted term (or phrase) is also required in the case of the picture itself, so that we have some similar way in which to refer to either qualities or parts of a picture.

Now the term ‘medium’ by itself, as an abstract sortal term, is not well-suited to this purpose, hence providing yet another reason<sup>21</sup> as to why the phrase ‘*medium content*’ is an appropriate one to use to refer to the pictorial analogue of configurational items.

Let me explain. Since on my theory a picture is itself a kind of representational content, any *parts* or *qualities* of the picture will themselves be content-like—hence the term ‘content’ in the phrase ‘medium content’. Also, as already seen, the content in question is indeed *medium*-related rather than *configuration*-related; that is, it is related to painting considered as a *medium* rather than just to painting considered as a collection of configurations or materials.<sup>22</sup>

To expand on this point, since a picture is (on my account) itself a *representational content* of its corresponding physical object or vehicle (rather than being itself a physical entity), then only some *correspondingly content-like entity* (or content-like *factors*) can serve in giving an account of the parts and qualities that make up a picture. Hence the physical materials or qualitative configuration associated with a given physical vehicle cannot serve that purpose. For at best they would figure in an account of how a physical object is able to *represent* a

<sup>20</sup> The presence of which marks, it should be remarked, is also what most directly makes it true that the object *has* a certain shape or configuration in the qualitative sense. Thus qualitative and part-like configurational aspects or items in a particular case will typically be integrally related.

<sup>21</sup> In addition to the reason given in Section I, namely that the kind of content in question is integrally related to the medium used by a picture’s creator.

<sup>22</sup> Also, I should explain why I do not simply use the phrase ‘pictorial content’ to refer to the content-parts or qualities associated with the content that (on my account) comprises a picture. My concern is that that phrase is already too wedded to the ‘content’ of a picture as conventionally understood, that is, to (what I have been calling) the *subject matter* or subject content of a picture.



picture—but, as with any representation, that would tell us little about the *nature* of what is thus represented.

#### IV. AN INTERPRETIVE TWOFOLDNESS THESIS

Now I shall present my own twofoldness thesis. In the first place, my thesis (as with Wollheim's later version) is a thesis about a single act of seeing that is both of representational subject matter, and of a picture or artwork which represents that subject matter, and which elements are *inseparably linked* to each other—and perceived to be thus—in a manner to be explained.

As a preamble, it will be useful to discuss briefly what it is for a picture to be a *representational* one, since I am only discussing representational pictures in the current account. Minimally, a representational picture is a picture that *has* or *represents* a subject matter.

Now I claim that, since the concept of pictorial representation is a broadly empirical or perceptual one, it must at least be *possible* that (in some instances) one can *see* that *a picture represents its subject matter*, or, in other words, see something that simultaneously visually involves both a picture, and its subject matter as represented by the picture. For in the absence of at least *some* such representational experiences of pictures, it is hard to see how we could have ever acquired the empirical concept of a representational picture.

Now this minimal claim of possible representational seeing is not yet a full-blown twofoldness thesis, for that will require—in my version—that *all* instances of seeing a picture, or some pictorial subject matter, are of this twofold representational kind. Nevertheless, I believe that it is important that a twofold thesis should maintain its roots in the concept of a representational picture, and so my twofoldness thesis will not merely be about pictures and subject matters, but about pictures insofar as they *represent* some subject matter.

Now I shall proceed with my main twofoldness thesis. To begin with, recall that on my view, one paradigm type of medium content is *expressive* content, which expresses an artist's intentions and style with respect to some subject matter. Another way of putting this point is to say that medium content involves a visual *interpretation*, *construal*, or *commentary* on some subject matter. This *interpretive* element plays a central role in the twofoldness thesis to be outlined.

Consider next an analogous case of a *literary* commentary, such as a newspaper editorial. Three features of such a commentary are relevant. In the first place, a commentary by its very nature is a commentary *on* or *about* some subject matter, and in that sense any given commentary is *inseparably linked* to the subject matter about which it is a commentary. For it would not be a commentary unless it was about *some* particular subject matter, and it could not be identified as *the particular commentary that it is* independently of the one particular subject matter that it is about.

In the second place, it is notoriously the case that editorial commentaries do

not simply *objectively describe* their subject matter, but instead *interpret* or *construe* the subject matter in whatever way best fits with the intentions and editorial style of the writer in question. If an ideal of objective description is *transparency*—in which the pure subject matter itself is presented, with no overlaid editorial biases or construals—then any commentary must *fail* to be transparent, in that it would not be a commentary at all if it did not present some *construal* of its subject matter, rather than merely a transparent objective description of it.

Thus the contents of editorial construals or commentaries are inevitably *non-transparent*, or *opaque*, with respect to their commentaries, in that there is no possibility of disentangling the relevant *editorial construal* of the subject matter from some hypothetical corresponding ‘pure’ or objective subject matter.

In the third place, consider a reader of such an editorial commentary, and her experience of the subject matter of the commentary as she encounters it in the context of actually reading the commentary. I would claim that, because of the opacity of the commentary,<sup>23</sup> any experience she has of the subject matter of the commentary is actually an experience of the *construed*, rather than the hypothetical ‘pure’, subject matter. And what is more, that experience of hers, of construed subject matter, is *inseparably linked* to the very commentary that she is currently reading, since it is the subject matter *as construed by that very commentary* that constitutes the ‘subject matter’ as experienced by her.

To conclude this linguistic analogy, I propose an *interpretive twofoldness thesis* for *editorial commentaries* on the basis of this demonstrated ‘editorial opacity’, namely that a reader’s experience of a commentary, and of its construed subject matter, are inseparably linked in exactly the ways that have just been described.

Here is a brief clarification of the kinds of inseparability involved, which will apply to pictures also. The first point above is about how a commentary is ‘inseparable’ from its subject matter in the dual sense that (i) that commentary *could not* occur without a subject matter, and (ii) it *could not* occur with any subject matter other than its actual one. Now this point by itself does not exclude the possibility that its subject matter S might either occur by itself, or be the subject matter of some other commentary (or both). However, the third point excludes both possibilities, so that commentary and subject are *mutually inseparable*, on this account, in that neither could correctly or veridically be experienced as occurring without the other.

As for opacity, logically speaking B is *opaque* relative to A just in case B’s relation to A provides a necessary condition of the identity of B—so that opacity is one form of logical dependence.<sup>24</sup> Thus cases of *transparency* of B relative to A are instead cases in which the identity of B is logically independent of its relation to A.

<sup>23</sup> A commentary is ‘opaque’ in a derived sense, if it induces opacity in the subject matter that it construes. See also the clarification on opacity in the text below.

<sup>24</sup> On this definition not only is *the subject matter* of a commentary opaque relative to its *commentary*, but the converse relation holds as well. However, the intuitive picture of an interpretive mode of

Returning to pictures, my pictorial twofoldness thesis can be summed up as a claim that pictures are *pictorially opaque*, in precisely the same ways as those in which editorial commentaries have been shown to be ‘editorially opaque’. Thus on my account both are species of (what could be called) *interpretive opacity*.

I shall now describe the corresponding points about pictures, retaining as far as possible the same descriptive forms as in the literary case.

In the first place, a picture—that is, an organized collection of medium content—is by its very nature a visual construal or commentary *on* or *about* some subject matter, which subject matter it represents; and in that sense any given visual construal is *inseparably linked* to the subject matter about which it is a construal. For it would not be a visual construal unless it was about (or, represents) *some* particular subject matter, and it could not be identified as *the particular visual construal that it is* independently of the one particular subject matter that it represents.

In the second place, it is notoriously the case that pictures, and particularly artistic pictures, do not simply *objectively represent* their subject matter, but instead *interpret* or *construe* the subject matter in whatever way best fits with the intentions and pictorial style of the artist in question. If an ideal of objective visual representation is *transparency*—in which the pure subject matter itself is visually represented, with no overlaid artistic biases or construals<sup>25</sup>—then any visual construal must *fail* to be transparent, in that it would not be a visual commentary at all if it did not present some *construal* of its subject matter, rather than merely a transparent objective representation of it.<sup>26</sup>

Thus the contents of artistic construals or visual commentaries are inevitably *non-transparent*, or *opaque*, with respect to their pictorial commentaries, in that there is no possibility of disentangling the relevant *pictorial construal* of the subject matter from some hypothetical corresponding ‘pure’ or objective visual subject matter.

In the third place, consider a perceiver of such a picture, and her experience of the subject matter of the picture as she encounters it in the context of actually seeing the picture. I would claim that, because of the opacity of the picture, any seeing by her of the subject matter of the picture is actually a seeing of the

---

access to a subject matter inducing the subject matter to become ‘clouded’ or ‘opaque’—relative to some supposed ‘transparent’ but logically distinct form of the subject matter—works better *as an easily accessible intuitive picture* than does an attempted intuitive picture for the converse relation. This is doubtless related to the fact that we intuitively view commentaries as in some sense *acting upon* or *changing* subject matters, but not vice versa.

<sup>25</sup> In ‘Medium, Subject Matter and Representation’ I make a related point that brings in the concept of a medium, namely that on a transparency view, differences *among media* are nothing more than differences in their ability to (transparently) represent various features of their subject matters when they are used in representations. I also make the further point that, on a transparency view, ideally a medium should be used in as *self-effacing* a way as possible.

<sup>26</sup> See my ‘Varieties of Visual Representation’ for an account of ‘simple’ or non-interpretive representations, in which a physical object directly represents its subject matter. See also the discussion of *trompe l’oeil* representations in the next section.

*construed*, rather than the hypothetical ‘pure’, subject matter. And what is more, that seeing of hers, of visually construed subject matter, is *inseparably linked* to the very picture that she is currently seeing, since it is the subject matter *as construed by that very picture* that constitutes the ‘subject matter’ as seen by her. (Thus ends the pictorial analogue of the ‘editorial commentary’ points.)

Thus my *interpretive twofoldness thesis* for pictures is that a viewer’s seeing of a picture, and of its construed subject matter, are inseparably linked in exactly the ways that have just been described. And the clarification of the kinds of inseparability involved for a commentary and its subject matter applies equally well to pictures and their subject matters: in particular, a picture and its subject matter are *mutually inseparable*, in that neither could (correctly) be seen to occur without the other.

The foregoing perceptual or experiential thesis can also be captured in a logical formulation, as follows. As an initial, but inadequate formulation, the fact might be cited that a perceptual statement such as

1. Person X sees that picture P represents subject matter S.<sup>27</sup>

is *logically opaque*, in that inferential exportations to

2. Person X sees picture P.

and

3. Person X sees subject matter S.

are *invalid*.<sup>28</sup>

However, this does not capture even part of my inseparability thesis, since it merely shows that statement 1 describes a case of (what could be called) *propositional* or *factual* seeing—of seeing that *P is R-related to S*<sup>29</sup>—for which, since it is a distinctive kind of seeing, one would not expect a simple analysis as two combined cases of simple seeing (of *seeing P*, and *seeing S*). Hence it is to be

<sup>27</sup> Statement 1 is to be read as implying that ‘picture P represents subject matter S’ is *in fact* what person X sees, but that X may not herself *realize* (with full explicitness) exactly what she has thus seen. This point is needed so as to allow statement 1 to be true even for unsophisticated perceivers, who may only marginally possess the concepts of ‘representation’, ‘picture’, and ‘subject matter’.

<sup>28</sup> This logical sense of opacity is the familiar one that is applicable to other perceptual contexts as well. For example, the statement ‘Bill saw that his car was not in the parking lot’ is also opaque, in that one cannot validly infer from it that ‘Bill saw his car’.

<sup>29</sup> But this is not to deny that propositional seeing may be an integral part of twofold seeing; it is just that it is not a *characteristic* or *distinguishing* part of it.

expected that statement 1, concerning propositional seeing, would not entail either of the 'simple seeing' statements 2 and 3.

What is instead needed, as a legitimate part of my twofoldness thesis, is the stronger thesis that

4. (1) entails  $\sim(X \text{ sees } P) \cdot \sim(X \text{ sees } S)$ .

That is, that if statement 1 is true, then neither of the simple seeing statements 2 and 3 can be true. Point 4 also captures, I believe, a logical core of Wollheim's own later twofoldness thesis as applied to representations,<sup>30</sup> though not the twofoldness of *all* 'seeing in' cases, some of which do not, on his view, involve representations.

To complete the logical analysis of (my interpretive brand of) twofoldness, we need two more axioms, the first of which is

5. There are no cases of simple seeing of pictures or subject matters.

Point 5 is justified by the relevant inseparability results presented above. In the case of a picture, because a picture is on my account essentially *a visual construal of a subject matter*, it follows that, if the picture is considered simply 'by itself', independently of a subject matter, it would be an *incomplete* or *unsaturated* entity that is not the kind of thing that could be perceived. Hence 'X sees picture P' must be false for all values of X and P.

And similarly, because on my account a subject matter is essentially a *construed* subject matter, which is thus construed by the very same picture that represents it, it follows that, if the subject matter is considered simply 'by itself'—independently of its thus being construed by the picture that represents it—it also would be an incomplete or unsaturated entity that is not the kind of thing that could be perceived. Hence 'X sees subject matter S' must be false for all values of X and S.<sup>31</sup>

And finally, we also need the *mutual inseparability* axiom, that

6. Neither a picture, nor its subject matter, could (correctly or veridically) be seen as occurring without the other.<sup>32</sup>

<sup>30</sup> At least, if his concept of a physical representation is reinterpreted as my concept of a picture.

<sup>31</sup> Of course, on my view common claims that someone 'sees a picture', or 'sees some subject matter', are to be interpreted as *twofold* claims, rather than in the technical 'simple' senses here introduced.

<sup>32</sup> This axiom could also be given a perception-independent formulation as: any picture or subject matter occurs in at most one picture-subject matter combination. However, since the subject matter in question is *opaque* subject matter, which arguably has integral perceptual or experiential connections, this would be a less basic formulation.

## V. QUESTIONING INTERPRETIVE TWOFOLDNESS

Now that an interpretive twofoldness thesis is available, what kind of evidence, if any, is required in order to defend it?

In answering this question I shall take my cue from the corresponding literary example of a newspaper commentary. Properly understood, there is nothing particularly controversial about the corresponding twofoldness thesis for literary commentaries, since the thesis simply involves a drawing out of some (perhaps unexpected) logical implications of assumptions about commentaries, and their subject matters, that are universally accepted. That opinionated commentaries and their commentary-construed subject matters are inseparably twofold requires proof, if any is required, only in the sense of a *logical* proof or demonstration that the universally held assumptions do indeed have those (inseparably twofold) logical implications—which demonstration I have already provided.

And the same goes, I hold, for the twofoldness of pictures. Once it is conceded that pictures are, in some suitably broad sense, *visual commentaries or construals* of their subject matters, then it follows *as a matter of logic* that pictures are inseparably twofold. Thus, unlike Wollheim's later twofoldness view, which he presents as an exciting and mysterious thesis about the visual phenomenology of twofold seeing, my view is rather a *normative conclusion* about *what we are logically required to say or hold* about cases involving the seeing of pictures and their subject matters, given only certain fairly minimal and generally accepted assumptions about the nature of pictures.<sup>33</sup>

Thus in my view it would simply be a misunderstanding if critics were to question directly my twofoldness conclusion itself. Instead, they should raise issues about one or more of three things: (i) the premises, including their applicability to pictures, from which I *logically derive* the twofoldness conclusion or conclusions; (ii) the adequacy of my theory of pictures itself, in which a picture is identified with medium-related content that is, in typical cases, an expressive construal of its subject matter, and which theory hence has enough conceptual resources to *model* the relevant premises and twofold conclusions; or (iii) *empirical application questions* regarding how various miscellaneous pictorial cases or intuitions relate to twofoldness itself, or to any theory of pictures, including the present one, that can model twofoldness-related phenomena.

A prominent nexus of issues falling under category (iii) is (what could be called) an *error theory of pictures*, which would attempt to explain, or explain away, apparent *deviations* from twofoldness premises or conclusions, whether or not

<sup>33</sup> Or, put another way, it provides a basis for a regulative theory as to which cases of seeing should *count* as being cases of pictorial seeing. However, it should be noted that Wollheim's earlier account of twofoldness, as found in Richard Wollheim, *Art and Its Objects: With Six Supplementary Essays*, 2d edn (Cambridge and New York: Cambridge U.P., 1980), in his essay entitled 'Seeing-as, Seeing-in, and Pictorial Representation', also regards twofoldness as '... a normative constraint upon anyone who tries to appreciate works of those arts [painting and poetry]' (p. 216).

they are modelled in some appropriate pictorial theory. I shall now give some examples of likely fragments of such an error theory of pictures, using as an example a Van Gogh picture of a cornfield, executed using the painter's characteristic large and vigorous brushstrokes. The theory will attempt to identify *characteristic error conditions* under which deviations from expected results occur, or seem to occur. All of the examples given will concern apparent cases in which a picture is seen, but its subject matter is not.

The first error condition occurs if, rather than seeing a picture itself, one instead just sees the corresponding *physical painting*. Of course it is possible to do this, on my theory, without seeing the subject matter of the picture, and hence it does not constitute a counter-example to twofoldness.

The second error condition concerns the seeing of medium content, and comes in at least two versions. First, on my view, one does not see *the picture itself* unless one sees the *relevant organized collection* of medium content that is identical with the picture. Now one way in which this can fail to happen is if one perceives some *part* of that medium content, but without perceiving it *as* being part of that organized collection. For example, one might become so interested in some of Van Gogh's vigorous brushstrokes 'in their own right' that one fails to perceive them *as part of* the picture in question, and hence for that reason one does not thereby also perceive the relevant part of the subject matter of the picture.

A somewhat more radical failure in perception of the medium content of a picture might occur as follows. An art student might approach a Van Gogh picture, not in order to appreciate the picture and its subject matter for their own aesthetic sake, but instead to learn about—perhaps in order to borrow—some of the painter's *stylistic methods*. In such a case, the student might reinterpret the physical painting as representing, not the original organized collection of pictorial content that constitutes the picture, but instead a more 'unsaturated' or *indeterminate* kind of medium content—none of which is identical to any of the relevant pictorial medium content—that might be made determinate in many different pictorial ways, and with many different corresponding subject matters. Obviously one could see such indeterminate medium content, and evaluate its worth as a stylistic method relative to many possible pictures and subject matters, without seeing any of the subject matter of the relevant picture.<sup>34</sup>

A third error condition concerns a 'flip-flop' situation in which some of the medium content of a picture is reinterpreted as *subject matter*—or more precisely, a situation in which the physical painting itself is reinterpreted as representing *another* picture, some of whose predominant subject matter occurs in areas that formerly were predominantly areas of medium content in the original picture.

---

<sup>34</sup> This would be an analysis in line with my explication of Wollheim's nascent concept of 'a medium', or of the possibilities of a medium, as discussed in Section III.

Obviously in such a case there is a risk that one will no longer be able to perceive the subject matter of the picture in its precise original form, after one has engaged in such a perceptual ‘flip-flop’.<sup>35</sup>

A fourth error condition involves the case of *trompe l’oeil* representations, which (when successful) seem to involve no twofold awareness of medium content and subject content. I handle this case by denying that they are *pictures*.<sup>36</sup>

Briefly, on my view a *trompe l’oeil* painting is a *simple* representation, in that the physical painting *directly* represents its subject matter, with no intervening pictorial or medium content of any kind. Hence it is only to be expected that they are unable to provide twofold visual experiences, since they lack the expressive means to do so.<sup>37</sup>

A fifth error condition, or syndrome of conditions, concerns the absence of any critical ‘normal observer’ factors such as full alertness, requisite pictorial or artistic prior experience, an unbiased and sympathetic determination to visually appreciate a picture in its own terms, and so on. Clearly the absence of one or more such factors could lead to various perceptual failures, including a failure to see relevant parts of the subject matter of a picture that one is, on the basis of such reasons, more or less *imperfectly* seeing.

To conclude this section, I shall make the (perhaps obvious) point that my interpretive twofoldness thesis, as interpreted within the current theory of depiction, is inherently easier to defend than Wollheim’s own version, in that on my account *both* a picture *and* its subject matter are different varieties of representational content. Wollheim was engaged in the quixotic task of trying to show how what are in fact *logically distinct items*—namely configurational materials and subject matters—could nevertheless *correctly be perceived* as being *logically inseparable* in certain situations. But my entirely content-based theory of pictures provides an ideal model or realization for the interpretive twofoldness thesis, for I can claim that a picture (speaking informally) *just is* such a single package of

---

<sup>35</sup> For example, it seems likely that many of Ray Lichtenstein’s well-known blown-up versions of traditional pictures and cartoons, in which what were originally medium-content features of some other artist’s intention and style are transformed into deadpan Lichtenstein subject matter, may have originated in perceptions of this kind. A simpler example would be that of a misinterpretation of a steel engraving of a woman (which includes medium-related cross-hatching and repeated lines) in which it is wrongly seen as a picture of a woman with lines, or a net, all over her face. The example is from Andrew Harrison, ‘Dimensions of Meaning’, in *idem* (ed.), *Philosophy and the Visual Arts: Seeing and Abstracting* (Boston, MA: Kluwer, 1987), p. 63, but who uses it for another purpose. Also see my paper ‘Medium, Subject Matter and Representation’, in which this example is discussed in more detail.

<sup>36</sup> See my ‘Varieties of Visual Representation’.

<sup>37</sup> Related views that treat *trompe l’oeil* cases as in some way failing to be fully pictorial are provided by Susan Feagin and Jerrold Levinson in the previously mentioned symposium on Wollheim: see Feagin, ‘Presentation and Representation’, and Levinson, ‘Wollheim on Pictorial Representation’. Of course this is also Wollheim’s own view of *trompe l’oeil* cases: see Wollheim, *PA*, p. 62.



visual information, as represented by some physical object, that may be discussed in the two complementary but inseparable ways that have been outlined.<sup>38</sup>

#### VI. GOMBRICH VINDICATED

Ernst Gombrich has a view according to which it is impossible simultaneously to see both a physical painting, and its subject matter or content.<sup>39</sup>

In his view this impossibility is analogous to the impossibility of seeing, as one looks at a 'duck-rabbit' (a well-known visual design, interpretable either as a duck or as a rabbit) both the duck and the rabbit at the same time. In such a case, each interpretation conflicts with the other, so that at most one of them can be seen at a given time.

Now it is usually assumed that Gombrich is doubly wrong in this case, both for thinking that the duck-rabbit case is genuinely analogous to the painting-subject matter case,<sup>40</sup> and for thinking that in any case there must be a conflict between seeing a painting, and simultaneously seeing its subject matter.<sup>41</sup>

What is more, it is also generally assumed that Gombrich's view is inconsistent with Wollheim's twofoldness thesis. For Gombrich asserts the *impossibility* of simultaneous painting-subject matter seeing, while Wollheim instead seems to assert the *necessity* of such simultaneous painting-subject matter seeing.

However, I claim that, just as it was possible to vindicate a form of Wollheim's twofoldness thesis, so also is it possible to vindicate *both* of Gombrich's views—on the relevance of the duck-rabbit analogy, and the impossibility of simultaneous painting-subject matter seeing—and also show them to be entirely consistent with the reinterpreted Wollheim twofoldness thesis.

What is more, in the case of Gombrich no reinterpretation of his views is needed at all. It is rather, I would claim, that the general failure to distinguish the *physical* or *configurational materials* of painting, such as a physical painting itself, from *medium-related content*—such as a represented picture—has led to a systematic confusion of cases, and hence produced spurious or merely apparent evidence for one view or another, including the appearance of conflict between the views of Gombrich and (a properly reinterpreted) Wollheim, and the general impression that Gombrich's evidence for his views is weak or non-existent.

<sup>38</sup> A Kantian view of twofoldness as providing a synthetic *a priori* 'law of thought' regarding pictures might also be appropriate.

<sup>39</sup> Gombrich, *Art and Illusion*. Arguably this point is of central strategic importance to Gombrich in supporting his general illusion theory of depiction, in that an illusion as of seeing a real thing could hardly be produced if one was at the same time aware of the physical surface of a painting. See Budd, 'On Looking at a Picture', and Lopes, *Understanding Pictures*, p. 40.

<sup>40</sup> Wollheim argues against the analogy in *PA*, p. 360, n. 6.

<sup>41</sup> For example, see Lopes, *Understanding Pictures*, pp. 40–42, who claims that 'It is a grave mistake to suppose that no picture may be experienced simultaneously as a marked, coloured, textured surface and as what it represents.' See also Wollheim's own comments in *PA*, p. 360, n. 6.

First, Gombrich's claims concern the relations between a *physical painting* and its subject matter, whereas in my view a proper reinterpretation of Wollheim's twofoldness thesis instead has it as concerning the relations between a *picture* and its subject matter. Thus logically at least there cannot be any conflict between Gombrich's impossibility thesis and Wollheim's twofold necessity thesis, since Gombrich's thesis is about a *physical painting*, whereas Wollheim's is instead about a *picture*.

This already is a significant result, since it means that even if Gombrich's claims are most probably true (as I shall argue), they no longer threaten to impugn the reinterpreted twofold thesis.

Here, then, is my brief vindication of Gombrich.<sup>42</sup> I shall argue that it has not been realized that acceptance of the impossibility of simultaneously seeing a duck-rabbit as a duck and as a rabbit immediately gives strong support to his thesis of the impossibility of simultaneous painting-subject matter seeing.

The following concepts and points will be useful during the discussion. Consider a given region of the visual field of a perceiver that contains a painting, such as a duck-rabbit painting. First, it is clearly the case that visual information concerning the given region of the visual field is initially processed at a low or sub-doxastic level. Consider then a higher-level interpretation of the lower-level visual data that is *comprehensive*, in the sense that it *uses all of the available lower-level data* in a single, consistent, high-level interpretation of that data.

Now any such *comprehensive interpretation* precisely defines the exact limits of 'visually compossible seeing'—that is, of items that can simultaneously be seen—for the given region during a given perceptual episode. And any comprehensive interpretation distinct from the previous one will doubly be in conflict with it, first because each must occur non-simultaneously, and second because each interpretation will make—because they are distinct—*conflicting* uses of at least some of the available low-level visual data.

The intuition that is at work here is this: that one cannot have one's visual cake, and eat it too. The visual cake (the low-level data) gets *used up* by a given comprehensive interpretation, and hence one cannot *simultaneously* visually experience some *different* high-level interpretation of that same visual cake. Of course a given set of visual data can be reinterpreted, but my point is that it would indeed be a *reinterpretation*, a second and distinct comprehensive interpretation that would doubly visually conflict with the first comprehensive interpretation.<sup>43</sup>

Here is the relevance of this point to the Gombrich case. To begin with, the duck-rabbit case perfectly illustrates the point. The reason why one cannot

<sup>42</sup> Perhaps I should make it clear that in general it makes no difference to my own view of pictures, including the interpretive twofoldness thesis, as to whether or not Gombrich can be vindicated.

<sup>43</sup> Maynard in 'Seeing Double', p. 156, argues that '... there is no general question about people simultaneously processing sense inputs in alternative ways'. I could agree, but my point is rather about a *comprehensive, high-level* interpretation, of which a person is *visually aware at a given moment*.

simultaneously see the duck–rabbit *as a duck*, and *as a rabbit*, is because each interpretation is itself a *comprehensive* interpretation of all the low-level relevant data, so that there are *no data left over* to allow a simultaneous different interpretation, because the content in question covers the whole of the visual region from which the data are obtained.<sup>44</sup>

However, it has not been realized that if one accepts this point, or some similar point expressed in different terminology, then one has *already* made it very difficult for oneself not to accept Gombrich's other claim concerning the conflict between seeing a physical painting and seeing the subject matter of the associated picture. Critics of Gombrich such as Wollheim focus on the fact that the duck versus rabbit case is *symmetrical* (both are subject matters), whereas a corresponding 'physical painting versus rabbit' case is an *asymmetrical* pair (e.g. *PA*, p. 360, n. 6).

But all that is necessary to prove his asymmetrical thesis is that *one* member of the pair—namely, the subject matter—should be a *visually comprehensive interpretation* of all the relevant data. But has one not already conceded that, in conceding that Gombrich is correct about the duck–rabbit conflict, a point that everyone accepts as valid?

As far as I can see, there are only two ways to attempt to avoid this conclusion. One way would involve engaging in some suspicious-sounding revisionist backtracking, such as by saying that after all a given interpretation of the duck–rabbit (for example, as a rabbit) has not been *proven* to be a fully comprehensive interpretation of the data by itself; so that for instance it has not been ruled out that one could *either* simultaneously see 'a physical painting and a duck', *or* instead simultaneously see 'a physical painting and a rabbit'.

However, I doubt that I am alone in finding that interpretation tortuous in the extreme, and one that no one would ever have thought of simply on the basis of any actual visual experiments with a duck–rabbit painting.

The other possible attempt to avoid the conclusion that subject matter provides a *visually comprehensive interpretation* of all the relevant data would involve an attempt to cast doubt on 'duck' content (or 'rabbit' content) as somehow not being suitably representative of content in general.

However, my argument for (for example) a 'rabbit' interpretation being a *comprehensive* or 'data-exhausting' interpretation—of all the low-level visual data from the visual region in question, with which the content is co-extensive—does not depend on the contingent fact that, as it happens, the low-level content comprehensively interpretable as a rabbit is *also* susceptible of an alternate and distinct high-level content interpretation as a duck. The argument applies equally to *any* case in which a region of content, because it is co-extensive with the visual

<sup>44</sup> My interpretive twofoldness thesis could be used to strengthen this point. Because picture perception has that kind of double interpretive complexity, it is even more likely that a *pictorial* interpretation of data is indeed a 'comprehensive' interpretation, in the relevant sense.

region from which low-level visual data are obtained, thereby exhausts those data in the process of its being defined as a comprehensive high-level interpretation of those data. The duck-rabbit case serves merely to dramatize this internal or logical feature of any comprehensive high-level cognitive interpretation.

Thus, to summarize, I conclude that Gombrich is very likely correct,<sup>45</sup> both in holding that a visual experience of a given visual region as a certain kind of subject matter precludes also experiencing that same region as being part of a physical object, and in holding that the duck-rabbit case is relevant to deciding that issue.

And, since this paper is already long enough, I shall finish on that note.<sup>46</sup>

John Dilworth, Department of Philosophy, Western Michigan University, Kalamazoo, MI 49008, USA. Email: dilworth@wmich.edu

---

<sup>45</sup> Only 'very likely', because the question is a broadly scientific one, whereas factors such as the logical inseparability involved in my corresponding twofoldness result give me appropriately greater confidence in its truth.

<sup>46</sup> My thanks to Western Michigan University for a period of sabbatical leave, which facilitated the writing of this paper.