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## Perspective, Convention and Compromise

### §1 The Issue

What is special about picturing in perspective? The question needs clarifying. In one sense, all picturing is perspectival, for there can be no depiction which is not from some point, or points, of view. In another sense, only some pictures are perspectival, or in perspective. In this sense, perspectival pictures are those conforming to the rules of some set of drawing systems. This is the sense relevant here, but it is hard to clarify satisfactorily. One thing is clear: the required conformity is not historical. It matters not how the picture was actually produced, but whether the finished product has the features the rules prescribe. The unclarity lies in just which drawing systems are the relevant ones, and what, if anything, unites them as a group. I will try to proceed without addressing these issues, returning to them only at the close.

Unfortunately, even granting this omission does not leave our question clear. What sort of 'specialness' is at stake? Enthusiasts and sceptics about perspective sometimes frame the issue between them as whether or not perspectival picturing has a special 'authority' or 'unique validity' (Hyman 1992), but what does this mean? We can make some progress by appeal to the idea of convention, provided we give that notion a clear content. As I will use the term, for a practice to be conventional is for it to be one of two or more equally good solutions to a problem, all of which are available to a given community, which is adopted by each member of that community simply because it is adopted by the others, it being common knowledge that this is so.[1] In order to apply this notion to the matter in hand, we need to specify the problem which picturing in perspective solves. I will make a suggestion on this score at the

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[1] This is a drastically simplified version of David Lewis's much admired account (1969).

paper's end. Given some such specification of the problem, the question of perspective's status as conventional or otherwise will centre on whether its solution to that problem is uniquely advantageous.

Is the question, then, whether perspectival picturing is conventional, in the sense defined? Not quite. For the sceptical, conventionalist answer might take a more or a less radical form. We have as yet said nothing about picturing in general. Given a specification of the problem it solves, we can ask of it too whether it is conventional. The two sceptical positions on perspective both hold that picturing in general is a matter of convention. The more radical view is that, even given the conventions constituting picturing in general, the further practices definitive of perspectival picturing are themselves a matter of convention. The less radical position is that, given those general picturing conventions, perspective is not conventional. That is, given that more general conventional practice, perspectival systems solve their specific problem better than rival solutions. An analogy may help. It is a conventional matter which side of the road we drive on. But, given that practice, it is not a matter of convention which direction one ought to look before stepping out from the curb. If the problem is that of avoiding being run over, the background conventions render one solution better than the alternative, and hence not itself conventional. The less radical scepticism about perspective sees it as playing a precisely parallel role. We need to phrase our question so as to leave room for this sort of view.[2]

We can thus formulate the question as follows. Is perspectival picturing (a) a matter of convention; (b) a non-conventional consequence of those practices, themselves conventional, which constitute picturing in general; or (c) neither of the above? As noted above, this question is incomplete without specifications of the problems picturing in general and

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[2] Logic leaves room for a fourth position, on which picturing is not conventional, but picturing in perspective is so. Although intriguing, this view is not adopted by any writer known to me, and is not discussed below.

perspectival picturing in particular are, respectively, intended to solve; and without some definition of which are the perspectival drawing systems. I think, however, that it is sufficiently clear for discussion to proceed.

**§2 A Theory of Pictures**

I will answer the question by appeal to a particular account of pictorial representation. That account needs more exposition and defence than I can give it here (see Hopkins 1998). If it is of interest anyway, that is because it points the way to a compromise between the enthusiastic and sceptical positions on perspective. Even if the account is rejected, perhaps some of its rivals can adopt the structure of that compromise. The compromise emerges in sections 5 and 6. §5 shows how the view can accommodate many of the ideas which suggest that perspective is a matter of convention. Despite that, §6 explains just what is, on my account, special about perspectival picturing, in terms that are, in one respect at least, as strong as any enthusiast about perspective could want. But to see how this combination of responses emerges, we need first to expound the view. This section does that, and the next two elaborate and reject an objection, one particularly salient here. This is that the view seems unable to acknowledge the existence of any picturing other than that in perspective.

The account begins from Richard Wollheim's thought (1987 ch.2 §B) that what is distinctive about pictorial representation is that it engenders a special kind of visual experience. I follow Wollheim in calling this experience "seeing-in". It is a necessary condition on a surface depicting something that that thing be seen in the surface. But the condition is only necessary. What is further required is that something makes it *right* to see that thing there. The requisite "standard of correctness" is supplied either, in the case of non-photographic pictures, by the intentions of the artist, or, in that of photographs, by some special causal relation between the marked surface and the thing visible in it.

Where I differ from Wollheim is in my account of seeing-in itself. In my view, seeing-in is a form of experienced resemblance. To see something in a marked surface is to experience the marks as resembling that thing in a certain respect. The immediate problem is to say what this respect is, since we might think that the differences between picture and object are at least as obvious as any similarities. It's tempting to think that the picture is experienced as resembling its object in respect of some shape property. But, given the manifest differences in 3-D shape between (most) flat canvasses and what they depict, what can this property be? There is an answer to this question. It finds its neatest expression in the work of the eighteenth century philosopher Thomas Reid.

Reid distinguishes between two properties, which he dubs "real" and "visible" figure (1764 ch.VI, §7). The former is just 3-D shape. The latter is in effect the shape things have if we ignore the dimension of depth. It is a matter of the directions of various parts of the object from the point of view. Thus, if I see a long table stretching away from me, different parts of the table lie in different directions from my point of view. For instance, the two distant corners lie in directions different from each other, and different from the two directions in which lie the nearer corners. The far right hand corner lies to the right of the far left hand corner, and above the near right hand corner. And the directions in which lie the two distant corners are closer to each other than are the directions of the two nearer ones.[3]

I make two observations about visible figure. The first is that it is a genuine property of things in our environment. For the point of view is just the actual location from which the world is seen, and visible figure is simply a matter of the spatial relations in which parts of the object stand to that location. This is a complex property determined by the object's 3-D shape and orientation to the point of view, but it is distinct from either of these. Reid realized

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[3] Visible figure is what I have elsewhere (Hopkins 1998) called 'outline shape'.

this, despite the misleading contrast with "real" figure, for he described visible figure itself as "a real and external object to the eye" (1764 ch.VI, §8).

The second observation is that visible figure deserves its name: it is something we see.[4] My comments about the directions of corners of the table do not merely describe how the world is laid out. They also capture how my experience presents that arrangement. I see the directions in which the various corners lie, and see, for instance, that opposite points on the table's long edges lie in directions ever closer together, the farther away from me they lie. Of course, as with any property we perceive, our experience can be misleading, and will always be imprecise in certain respects. When a half-submerged stick looks bent we misperceive, not just its 3-D shape, but its visible figure too. And no visible figure is perceived with complete precision: there is always a degree of specificity beyond which experience neither represents the object as having this visible figure or as having that one. Indeed, imprecision is an important feature of our perception of this property. For experienced visible figure is only as determinate as the point of view it involves, and in general our visual experience presents the world not from a point, but from a zone in environmental space large enough, in binocular vision, to include the actual location of both eyes.[5] But the observation stands: visible figure is seen, albeit with varying accuracy and precision. This is just as well. Visible figure can hardly be central to making and understanding pictures, those representations so closely bound to vision, unless visible figure is something vision makes available.

Reid noted that it is the artist's job "to hunt this fugitive form [i.e. visible figure], and to take

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[4] Do not be misled by Reid's term. It is not part of the notion of visible figure that it is the only spatial property, or 'figure', that vision represents. My view is that others, including 3-D shape, are also seen. Although Reid disagreed (see Hopkins 2005), this claim is a further, and optional, element in his position.

[5] This last is an empirical speculation, but a plausible one. If right, it allows us to dismiss an incipient worry. This is that, since we see with two eyes, we cannot see from a single point of view, and hence that something is amiss in my claims about the perception of visible figure.

a copy of it...." (1764 ch.VI §7). I more or less agree. For it is possible for a picture to resemble its object in visible figure, even though they differ considerably in 3-D shape. A picture of our table, for instance, might represent the four corners of its top by marks which lie in just the same directions from my point of view as did the corners themselves, when I stood before the table. The marks lie in the same directions, from the relevant point of view, as did the corners, even though, by lying at different distances in those directions, they form a configuration very different in 3-D shape from the table itself. But Reid's formulation is not quite right. What is crucial for pictorial representation is not actual resemblance in visible figure, but that the marks be *experienced as* resembling the depicted object in this respect. To experience this resemblance is to see the object in the picture. And, provided some intention or causal connection renders it right to experience the picture in that way, it is the picture's sustaining such experiences of resemblance in visible figure which constitutes its depicting that thing. Thus we have the basics of an account of picturing. What are the implications of this view for our question about perspective?

**§3 A Challenge – Accommodating the Variety of Pictures**

This issue is best approached through a challenge to the resemblance view. Surely at least some perspectival systems are designed precisely to preserve the visible figure of depicted objects. Consider Alberti's claim (1966 p.51) that when painters cover a plane with colours,

> "they should only seek to present the form of things seen on this plane as if it were of transparent glass. Thus the visual pyramid could pass through it, placed at a definite distance with definite lights and a definite position of centre in space and in a definite place with respect to the observer."

Isn't this strikingly reminscent of my description of how a picture of the table might preserve

its visible figure? The only difference seems to be that talk of the visual pyramid substitutes for that of directions from the point of view. Now, whatever Alberti was doing, he was attempting to prescribe how pictures should be fashioned. His injunctions presuppose that not all pictorial representations are this way, otherwise there would be no point urging that they should be. But if pictures fitting his prescriptions preserve visible figure, presumably those that don't fit them will not do so. And if these other pictures don't preserve visible figure, how can they meet the resemblance view's main condition on their counting as pictorial representations, *viz.* that they be experienced as preserving it? The view purports to be an account of picturing *per se,* but it seems at best to cover a tiny fragment of the pictorial realm, picturing in Albertian perspective.

Of course, there are other perspectival drawing systems. Perhaps they, or at least some of them, succeed in preserving visible figure too. But this at best goes only a small way towards meeting the challenge posed. For even if all picturing in perspective meets the view's criterion for pictorial representation, that still leaves all other picturing, quite implausibly, excluded.[6] In effect, the resemblance view seems to have taken what is true of a subset of picturing, a subset at best as large as that of all picturing in perspective, and made it definitive of picturing *per se.* And this leaves it giving implausible answers to the two questions before us. To the question "what is pictorial representation?" it gives an implausibly narrow answer, in effect one applying only to perspectival picturing. If so, it also gives the wrong answer to the question "what is special about picturing in perspective?". For it implies that it is special precisely in being the only picturing there is.

To save the resemblance view, we need first to argue that it covers all the rich variety in ways of picturing. But, having done that, we need also to find some other account of what is special

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[6] Given this, I need not at this point address the issue, set aside in §1, of which systems are the perspectival ones.

about pictures in perspective. The next section undertakes the first of these tasks. Since its main aim is negative—that the view can evade the current objection—readers more interested in my positive assertions about picturing and perspective may choose to skip this section.

**§4 Meeting the Challenge**

Let us begin by trying to sharpen the challenge. Consider a particular object, say a long table, at a particular distance and orientation. The challenge concerns the range of things the resemblance view can allow to count as pictures of that thing, at that distance and orientation. Only a very limited range of marks will preserve the visible figure of the table when so positioned. They might differ in colour, texture and sharpness of line, say, but not in their fundamental positions on the surface. Now, it is true that the view does not analyze depiction in terms of actual resemblance in visible figure—experienced resemblance is what matters. And it is quite possible that picture makers have learned to elicit such experiences even when the resemblances themselves are missing. After all, they have done just that for colours, using context to ensure that a pigment is seen as the colour of spring foliage, for all that the two are really rather different in hue. But there are strict limits on such trickery: a pink pigment cannot be seen as resembling one that is lime green, whatever the context. And this is because, quite generally, our perception of features of our environment is, while not perfect, mostly accurate. If this is true of resemblance in visible figure, there will be relatively little slippage between those marks actually preserving visible figure and those experienced as doing so. More or less, then, only those marks preserving visible figure will count as depicting the table. The challenge to the view is to make room for a wider range of marks, counting as depictions of the table, than this.

Showing that the resemblance view can meet this challenge is a complex matter. Here I can do no more than sketch some of the ingredients in a full reply. In this section I make three

points. All three embody the basic observation that marks depicting the table need not match any farther in content than that.

The first point is that not all marks depicting the table need depict it accurately. Some, that is, might depict the table as having properties it does not actually enjoy. It is obvious that, in general, pictorial misrepresentation is possible. A caricature of Tony Blair need not show his nose as being the shape it is, and may indeed distort his features quite drastically, while still depicting him. So there is no reason for every picture that depicts our table to show it as the shape or colour it really is, or as having the appropriate number of legs. Such misrepresentations differ in content from each other and from accurate depictions (save, of course, that at least one element is common to the content of all: the table). Now, with respect to such groups of pictures, the resemblance view, far from precluding differences in the marks composing them, actually expects such. Like any account of depiction, it seeks to say what it is for a picture to have its pictorial content. For instance, it will say that for something to be a picture of the table as having six legs, a round top, and so forth, is for it to be experienced as resembling in visible figure: the table with six legs, a round top, etc.; but that to depict the table as round-topped, etc., but with seven legs, the marks must be experienced as resembling: the table with seven legs, a round top, and so on. Now, the view does not say how the surfaces must be marked to sustain these experiences. But, given the rather limited slippage between actual resemblance and experience of it, it will at least be comfortable with the idea that different experiences of resemblance will be sustained by differently marked surfaces. Here then is one simple way in which marks depicting the table, from the specified angle, may differ from one another, so that not all of them preserve the table's actual visible figure.

Since the thoughts underlying this move are central to the second point too, it is worth spelling them out. Pictures need not be of particular things: a painting can depict a horse

without there being any answer to the question which horse it represents. But let us for the moment stick to pictures which do depict particulars. In effect, I have said that for these pictures the view makes central, not experienced resemblance to the picture's object as it actually is, but experienced resemblance to that item with whatever properties it is depicted as having. As I have noted, it is in a way obvious that this is how things should be. For only thus can the view perform its main job, of stating what it is for a picture to have a given pictorial content. For since the content of a picture is always richer than just the representation of some particular, and since there is no need for the properties filling out that content to be limited to ones the particular actually enjoys, the view must say that what matters is that resemblance be experienced to the object with whatever properties the picture ascribes.

However, despite this obviousness, discussions of resemblance views have always overlooked this point. There are several reasons for this. Some are good reasons, although there is no space here to argue that they do not justify rejecting the claims of the last paragraph.[7] But others are very poor. And amongst the poor reasons is a fixation with the idea of perspectival systems as ways of projecting particular objects onto plane surfaces. Thinking that this is what perspectival systems do, and thereby thinking of non-perspectival picturing as another way, or set of ways, to achieve the same result, makes it especially hard to grasp the thought that the test of the resulting marks is experienced resemblance to whatever the picture depicts, and not experienced resemblance to the original projected object. Yet in fact the notion of a perspectival system, at least in its full generality, has nothing to do with the

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[7] These are (i) that it is assumed the resemblance view is designed to do a job it should not, in fact, attempt to do, *viz.* explaining what it is about the picture which leads people to experience it as they do (*vide* §5); (ii) that it is correctly assumed that the resemblance view will want to give *some* role to how the depicted item actually is, the appropriate role then being misunderstood; and (iii) the worry that, if what matters is resemblance to the depicted object as depicted, the view takes for granted part of what it is supposed to explain, thereby guaranteeing that its its analysis cannot be sufficient. For discussion of these objections, see Hopkins 1998.

projection of real things. As I noted at the very start, rather than conceiving of perspective in this historical way, it is better to think of it as a set of conditions which completed pictures may or may not meet. So conceived, perspective can apply, or fail to apply, to pictures whether they are of particular objects represented accurately, of particular objects with properties they do not in fact enjoy, or not of any particular object at all. If we do not conceive of perspectival picturing in this way, it will seem less interesting than it really is. For, as noted, pictures in general are not limited to representing particulars nor to representing any particulars they do depict as having the properties they actually do. So picturing in perspective, if it is conceived as a way of projecting particular objects onto surfaces, does not, whatever its other benefits and limitations, offer the same range of possible contents, in terms of fundamental logical kinds, as picturing in general does.

This first point begins the process of broadening the range of pictures the view can countenance. But it only gets us so far. For misrepresenting pictures too might either be in perspective or not. We have seen how very different marks might all depict our table, by ascribing different properties to it. But nothing said so far shows how those pictures might be other than perspectival. So let me turn to the second point. This is to identify a second way in which pictures of the table might differ in content: rather than being inaccurate, their content might be imprecise. One might represent the table's shape very precisely, while another represents it as merely roughly round. For pictorial content to be imprecise is for there to be no answer, beyond a certain level of detail, as to which of two distinct properties the picture ascribes to its object.[8]

It is clear that pictures can have imprecise content. A quick sketch might represent nothing more than a figure's rough shape and posture. It should be equally clear that the resemblance

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[8] As I will say, the content is *imprecise*, and it is *indeterminate* how things are in the depicted realm.

view can allow for this feature of depiction. As we saw, what matters is experienced resemblance to the object as depicted. There is no reason why marks should not be experienced as resembling something with fairly indeterminate properties. But it will help meet the challenge to spell out just what such an experience does and does not involve.

What is not required is that the subject misperceive the marks, or only perceive them with some rather limited level of precision. I can see a child's drawing as resembling in visible figure our table, with the properties the picture ascribes, even if I see the wobbly lines which make up the drawing with perfect clarity. Nor is it required that I experience those marks as only resembling the (relatively indeterminately characterized) table *to a certain degree*. Above I made no mention of degrees of resemblance in explaining how the view accommodates misrepresentation, because there is no need to appeal to that notion. For all I said, we experience pictures as resembling their objects, as depicted, *perfectly*, even when the objects as they actually are do not share the marks' visible figure. And the same holds here. I may experience the child's wobbly lines as perfectly resembling a table in visible figure, provided the table in question is only roughly characterized: eg as more or less cuboid, rather longer than it is wide, and so forth. What is required for such experiences is that, while I may see the detailed features of the marks, only certain aspects of them are salient in my experience of resemblance. It is the rough shape of the line, not its meandering edges, which is prominent for me in seeing the resemblance to the table, indeterminately characterized.

How exactly do these observations about imprecise pictorial content help the resemblance view respond to the challenge? Different pictures of our table might, without misrepresenting it, differ in content from the perspectival representation, by depicting less determinate properties. Again, where there is a difference in content our view will predict, rather than preclude, that there at least may be a difference in the marks having that content. For, again, if two sets of marks are to be experienced as resembling different things, one way to achieve

this is for them to differ from one another.[9] One might think that these non-perspectival pictures succeed in depicting the table only insofar as they approximate to the perspectival depiction. But that is quite wrong. They are experienced as resembling a table somewhat indeterminately characterized, but there is no sense in which the actual table, with its real properties, provides some privileged way of filling in the indeterminacies. If one of them depicts the table as roughly cuboid, it matters not what the precise shape of the real table is. That is no more relevant to our characterization of the experience of resemblance than any other way of filling in the gaps. So there is no sense in which the perspectival picture preserves perfectly the visible figure which the other pictures merely roughly preserve. And, as noted, there is no room for the thought that the non-perspectival pictures are experienced as resembling their objects to some weaker degree than the picture in perspective. So the claim of non-perspectival pictures with relatively indeterminate content to depict the table is not in any way parasitic on, or less secure than, the claim of the perspectival picture to do so. And, given that in different pictures with imprecise content different aspects of the marks composing them may be salient, it seems that appeal to such imprecision widens quite considerably the range of marks which count as depictions of the table.

The third point develops the theme of imprecision. Thus far I have assumed that, where pictorial content is imprecise, so will be the experience determining that content. That is, if pictures ascribe relatively indeterminate properties to their objects, that is because they are seen as resembling objects with indeterminate properties. But there is another means by which pictorial content can be imprecise. Remember that depiction is not merely a matter of experienced resemblance to some item. It also requires that some standard of correctness renders it right to see the marks as resembling that thing (§2). It is possible for these two

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[9] This is only one way in which this might be achieved since, given the point about salience, matching marks might, under the right conditions, differ in content in virtue of different aspects of each being salient in the experience of resemblance. Hence the view predicts, not that the perspectival and non-perspectival pictures will differ, but that they might.

elements in the view to come apart. In general, this merely prevents depiction occurring, as when patterns in the frost on a window pane fail, despite being seen as resembling a figure of some kind, to depict that, or anything else, since nothing makes it right to see them as resembling something (Wollheim 1987). But in certain cases a mismatch between the experience of resemblance and the standard of correctness can merely serve to modify pictorial content. This occurs when what the standard makes it right to see the picture as resembling is less determinate than what it is seen to resemble. An example is provided by stick figure pictures. We see these as resembling very thin people, with swollen heads. But, although they depict people, they do not depict them as oddly shaped. For, while the drawer's intentions make it right to see the resemblance to people, it is not intended that resemblance be experienced to emaciated figures. The drawings depict people, but it is simply indeterminate, within certain very broad limits, what shape they are. Here, then, pictorial content is imprecise in ways in which the content of the experience of resemblance is not.

A relevant instance of indeterminacy attained by these means may be pictures in oriental perspective. These preserve their objects' visible figure, but only that visible figure formed at a point very distant from, and standardly some distance above, the depicted scene (Hagen 1986). Thus there is no trouble understanding how these pictures can be seen as resembling their objects in visible figure, for all that they do not deploy classical Western perspective. It seems to me an open question whether they depict their scenes from the high, distant, viewpoint described. But even if they do not, the resemblance view can easily accommodate this. The content of the picture is less precise, with respect to viewpoint, than is what is seen in it, because what is seen in these marks and what it is right to see therein comes apart in the way I have described.

There is more to be said about this second method for generating imprecise content. In particular, we need to know how those who see the pictures work out just what is depicted,

i.e. which aspects of their experience to rely upon in interpreting the pictures, and which to set aside. I will not go into these matters here (Hopkins 1998 ch.6). My point now is that, provided these questions can be answered, this second route to indeterminacy further widens the tolerance of the resemblance view. As the case of stick figures illustrates, marks very different from those required by perspectival systems can depict, given this latest refinement to the view.

I said at the start of this section that my three points would all exploit the possibility that different pictures of our table might differ in content. This is true, but the second and third in particular also allow us to see how rather different marks might nonetheless exactly match in pictorial content. They can do so if only certain aspects of them are salient in determining what the marks are seen as resembling. Or they can do so by supporting experiences of resemblance to things with different properties, provided only the common aspects of those resembled items are underwritten by standards of correctness, and thus retained in the content of the pictures.

**§5 Compromising with the Conventionalist**

The points of the last section go a good way towards meeting the challenge to the resemblance view. Marks very different from those preserving our table's visible figure might nonetheless depict it, from the right angle, provided they either misrepresent it or represent its properties only imprecisely, or, of course, do both. But I promised to do more than merely deflect objections. I promised some form of compromise with those who take depiction itself, and perspectival picturing in particular, to be either properly conventional, or a non-conventional consequence of conventions. How does the view yield that compromise?

We can see room for compromise by getting clear about the view's ambitions. It seeks to

analyse depiction in terms of the experience to which it gives rise, seeing-in. To do that, it needs to tell us what that experience is. It is the experience of resemblance in visible figure. But characterizing an experience is not the same thing as describing its causes. So far our view has not said much about how the world must be for a given surface to bring a given spectator to see a given thing in it. It is not entirely without implications for this question. If seeing something in a set of marks is a matter of experiencing them as resembling that thing in visible figure, then, given some basic facts of optics and psychology, the only marks that will do, except in exceptional circumstances, are ones at least approximating to the object's visible figure. And while the last section argued that there is no need for the approximation to be very exact, it does not follow that it need not hold at all.[10] But the causal condition thus stated is at best necessary. Many other factors will come into play in dictating whether a given experience of resemblance in fact occurs. Saying what these factors are is no part of the brief of our position. Its goal is to analyse seeing in, and thereby pictorial representation, not to describe the empirical facts about quite when that experience is engendered. However, the view can at least *acknowledge* these facts. It is here that the seeds of compromise can be found. For the view can allow that many of the factors empirically determining a given experience of resemblance are precisely those which the sceptic about perspective wished to emphasize. I offer three examples.

The first factor is the nature of the spectator's general perceptual environment. We can see that this must play a role in determining what folk see in surfaces by better understanding why that can't be determined by preservation of visible figure alone. The problem is that a given visible figure is compatible with an infinite range of 3-D shapes.[11] The attraction of

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[10] In §4 I said that the view makes no appeal to (experienced) degrees of resemblance in characterizing seeing-in. Indeed, the notion of degrees of resemblance does not figure in any of the claims that constitute the view. It is quite consistent with this that the view, coupled with some basic optics and physiology, has implications involving (actual) degrees of resemblance.

[11] Strictly, the relevant range is of different pairings of 3-D shape and orientation.

placing visible figure at the core of an account of picturing is precisely that objects of different shape, and in particular pictures and what they depict, might share visible figure. They need only be arranged differently, that is at different distances, along the same set of directions from a given point. But by the same token any other arrangement differing from these two only in respect of depth will likewise share that visible figure. So the fact that a picture preserves the visible figure of a particular 3-D shape cannot alone determine what is seen in it. For we might equally see therein one of the many other shapes the visible figure of which is thus preserved.

What then does determine which of the infinitely many compatible 3-D shapes we experience a given set of marks as resembling in visible figure? In part, the answer is surely our general perceptual environment. We see cubes in pictures of them, rather than irregular trapezohedrons, because our world contains far more of the former than the latter. Such examples may seem to offer little comfort to the sceptical, conventionalist, cast of mind. For these folk want to stress the variation across cultures in the reception and use of perspective; whereas many of the environmental features the role of which we are now describing will be common to all cultures. But the structure of the issue here is more general. Lots of people look more or less alike, some very much so. What determines that people see some of these lookalikes rather than others in their portraits and holiday snaps? Not resemblance in visible figure, since what so resembles one lookalike will equally resemble all. So the answer must lie in past perceptual experience: the folk have seen one lookalike, but had no contact with the other. Here there is variation across different groups of people of just the sort the sceptic seeks to highlight. The resemblance view can acknowledge the role of that variation, not by offering a conventionalist account of depiction, but by allowing the variation a role in the causal determinants of seeing-in.

The second factor I want to discuss is closer to the sceptic's heart. This is the spectator's

pictorial education. It is a matter of the sorts of pictures to which he has been exposed and the ways in which those have affected his perceptual sensitivities. Although few have realized this, the resemblance view is easily able to acknowledge the role such factors play. As Reid noted, visible figure is "fugitive", that is, it is hard to perceive with precision and accuracy. The less sharp one's perceptual grasp of it, the less sensitive one will be to a picture's failure to preserve it. In consequence, many non-perspectival pictures may well have been experienced as resembling their objects in visible figure perfectly well, for all that they don't in fact resemble them more than approximately. For they may have been intended for, and enjoyed by, viewers whose perception of visible figure was less than ideally acute. And one result of the rediscovery of perspective may have been to sharpen viewers' ability to perceive visible figure, thereby altering which marks will be experienced as resembling things in that respect.

Here the compromise with the sceptic is considerable. Our view allows that picturing essentially involves something independent of conventions, the generation of a particular experience, but allows that certain pictures may themselves alter which pictures are experienced in that way. The suggestion is that perspectival pictures may be one such case, altering viewers' general perceptual propensities so as to bolster their own position as the marked surfaces most likely to elicit the required experiential response. The point can be illustrated by tackling an argument of Goodman's, one intended precisely as an objection to perspective's special status.

One of Goodman's points against perspective was, in effect, that not even pictures in Albertian perspective preserve visible figure (1969 ch.1). The Albertian system requires receding horizontal parallels to be represented by converging lines, but not so parallels receding in the vertical plane. As Goodman observed, this is not true to the geometry. The difference between the directions of opposing points on the parallels narrows just as rapidly

with recession in the vertical plane as in the horizontal. What Goodman overlooked, however, is that this discrepancy may reflect an aspect of our *experience* of visible figure. Setting aside pictures for a moment, consider our face-to-face experience of things. Suppose that in such experience we are more sensitive to this shift in the direction of points on receding parallels when the recession is horizontal, as along railway tracks, than when it is vertical, as with the sides of a building viewed from the street. Then we would expect pictures which are experienced as preserving visible figure to exhibit precisely the discrepancy noted. Systematic discrepancies in our face-to-face experience of visible figure will dictate analogous discrepancies in our depictive practices. This provides a response to Goodman's objection, but it also suggests another point more relevant to present purposes. For it may be that our differing sensitivities to vertical and horizontal recession is as much effect as cause of the Albertian system. Perhaps the prevalence of picturing in Albertianian perspective has sharpened our perception of one of these aspects of visible figure over the other.

Of course, it is only a supposition that there are the systematic discrepancies in experience described above. And it is only an hypothesis that any such discrepancies might be fed by, as much as support, the pictorial systems we have adopted. These claims need testing empirically. But they can serve my purposes prior to such investigation. For the supposition alone is enough to neutralize Goodman's objection to perspective's privileged status, pending further investigation. And the hypothesis serves to illustrate that, to the extent that the sceptic is right to think that acculturation affects which pictures look natural or right to us, the truth in such claims is quite consistent with the resemblance view. For the hypothesis, produced within the framework of that view, is that a perspectival system has altered our perceptions in such a way as to ensure its own entrenchment as a way of generating pictures which look right. Suspicion that perspective's success is down to such bootstrapping is surely one of the motors of scepticism about it.

The third factor determining experiences of resemblance is another which might vary across cultures. This is the way in which we view pictures. Once again, we can approach the point via a potential objection to perspectival picturing's special status.

In Raphael's *The School of Athens* a figure on the far right holds a sphere, resting on the fingertips of his upturned hand. The sphere is depicted by a mark which is circular. However, classical perspectival systems suggest that, thanks to its oblique position away from the vanishing point of the picture, the sphere should be represented by an <u>elliptical</u> patch of paint. This preserves the visible figure a sphere would have at the single, highly precise, point in depicted space from which the entire scene might be viewed, and from which Raphael depicts the scene. In the nineteenth century, La Gournerie tried substituting, on an engraving of *The School*, an ellipse for Raphael's circle. However, the effect looked quite wrong, whereas Raphael's circle looks exactly right. The reason is, once again, that actual resemblance in visible figure is no guarantee of experienced resemblance therein. What determines the discrepancy here? The answer is that the way we view pictures affects which marks we see as resembling others in visible figure. Were we to view the Raphael from the point, in front of the marked surface, at which it exactly matches the visible figure, at the pictorial point of view, of the depicted scene; and were we to view it from there with one eye; then the elliptical patch would look right. That is, it would be seen as resembling an off-centre sphere in visible figure. But we don't normally look at pictures in that way. We move about, positioning ourselves at different distances from the marked surface, and at different points along its length. We use both eyes. We let our impressions build over time. All these factors dictate that the circular patch is the one we see as resembling a spherical, off-centre ball; and thus that such a patch is what depicts the ball. Things would be different were we the sort of viewers, with different habits of attending to pictures, which La Gournerie's unduly rigid application of perspective supposed us to be. Then an elliptical patch would carry the content

of our circular one.[12]

**§6 What is Special About Perspective?**

The last section tried to show that the resemblance view can accommodate some of the factors which have impressed those sceptical about perspective's special status. Section 4 argued that it is in no way obliged to restrict depiction to picturing in perspective. This leaves one issue outstanding. We need to say what is special about perspectival picturing, according to the resemblance view. If it's not the only picturing there is, and if the truth about both depiction in general and perspectival depiction in particular leaves room for at least some of the culturally relative factors the sceptic emphasizes, then how should we answer the question with which we began? Is perspectival picturing conventional, or a consequence of conventions? And if not, what is the problem that it solves better than any rivals?

Perspectival picturing is not a consequence of conventions, for picturing itself is not conventional. Pictorial representation essentially involves the generation of a certain experience, one of resemblance in visible figure. Generating this experience, in such a way as to effect communication, is the problem which methods of picturing have to solve. More precisely, in any particular case the problem is so to mark a surface such that it can be seen as resembling, in visible figure, a certain thing or scene, with certain properties, from a certain angle. Given our account of convention (§1), picturing will be conventional just if there are two or more equally good solutions to each such problem, the choice between them being made on the basis that others have also chosen likewise, it also being common knowledge that this is what is going on. There are three reasons why this condition is not met.

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[12] For La Gournerie's experiment, see Pirenne 1970 p.122. His engraving seems certain to have been far smaller than Raphael's original. This complicates the relationship between the story and the moral I want to draw from it. However, I think it obvious that the outcome would have been the same had La Gournerie tampered with the Raphael itself, so I ignore this complication here.

First, the range of possible marks in which the target content can be seen is narrowly constrained. For, despite all the concessions made above, it remains the case that in general a causally necessary condition is that the marks preserve, at least roughly, the relevant visible figure (§5). This excludes most of the possible ways of marking the surface from being solutions to the problem in hand.

Now, those concessions were real. I allowed that other factors do play a role in determining experiences of resemblance, factors other than the marks' actually reproducing the visible figure of the target scene. Nonetheless, none of these factors plays the role convention would require. For—the second reason—they are not in general factors under the control of a given group of picture makers or consumers. This is clearly true for the general nature of the perceptual environment. We can control the nature of what others or ourselves are in perceptual contact with, but only under very special circumstances (eg persuading someone to take part in a psychological experiment), and over very limited portions of space and time. The sort of very limited context over which we thus exercise control plays a highly restricted role in conditioning pictorial perception, compared with the subject's perceptual life history. The point also holds for pictorial acculturation. No doubt for any pictorial education a viewer has had, there is a different one he might have undergone. But it does not follow that either he, or any picture maker currently attempting to communicate with him, could have chosen to give him the one rather than the other. It is a matter of the history of his culture, and his own exposure, over many years, to various images. And something similar is at least in part true of our habits of viewing pictures. One can, by prescription or by constricting the viewer's movement, in exceptional circumstances limit the ways in which the picture is viewed. But even here many of the key factors, such as the tendency to deploy eye- and head-movement, reflect engrained perceptual habits, and even basic facts about visual physiology, which cannot be swept aside, however determined we are to find a new way of doing things.

Perhaps these considerations do not exclude every relevant possibility. Perhaps they leave some room at the margins, by manipulating the factors discussed, for alternative means to the same experiential end. But, and this is my third reason, even if this is true, it is not common knowledge that it is. Different viewing habits, for instance, may affect what people see a set of marks as resembling, but those people are not aware that this is so. This will prevent them from knowing that what they are responding to is one of two equally good solutions to a given pictorial problem. And thus, insofar as the factors of §5 meet the control condition for conventionality, they do not meet the common knowledge condition. Picturing, it seems, is not conventional.

Nor is it the case that perspectival picturing is conventional. It might seem that my attempt to defuse the objection that the resemblance view is hopelessly narrow forces just this result. For if perspectival picturing is not the only sort there is, and if the problem solved by all pictorial systems is just that of generating experiences of resemblance to certain things, it may seem that there is nothing left for perspective systems to do better than their rivals. If not, we would have in place at least part of what is required for their adoption to be a matter of convention. But this line is mistaken. There is something perspective systems do which others don't. They are not the only pictures, but they do constitute the only way to depict a certain kind of thing. For only pictures in perspective depict detailed spatial content. Or so at least I will argue.

I cannot derive this conclusion from the resemblance view alone. However, the only extra needed is a little theoretical reflection, and some plausible psychological speculation. Given these, although non-perspectival pictures might depict spatial detail, it seems that they do not in fact do so. Moreover, quite a lot would have to change before they would do.

The theoretical reflection is this. Consider properties which admit of ordered variation.

Colours are one example—there are many shades between pure green and pure blue. Spatial properties are another—my hand can occupy many positions between my two feet. One can represent such properties, of course, in more or less precise ways—merely specifying rough hues, or locations; or specifying more determinate ones. Now, some forms of representation allow one to represent instances of these properties in a highy precise but piecemeal way. One could, for instance, have a word for a particular shade of blue, without having words for any but the roughest categories of the other colours. But depiction is not a form of representation which allows for this possibility. If you can <u>depict</u> an instance of some colour, at a certain level of precision, your representational resources must also allow you to depict other colours, with equal precision. And likewise for spatial properties.[13]

Coupled to the resemblance view, this thought promises to ensure that only pictures in perspective can depict precise spatial properties. For suppose we consider a competing system—so called 'inverse perspective'. In pictures drawn on these principles, receding parallel lines in pictorial space are represented by lines on the canvas which <u>diverge</u>, in sharp contrast to perspectival systems, in which such lines converge. Thus, since perspectival systems preserve visible figure, inverse perspective cannot do so. Now, despite that, there is no reason to deny that inverse perspective yields <u>depictions</u>. For an inverse perspective drawing of an oblong table may indeed be seen as resembling, in visible figure, an oblong table. But this is only obviously possible if the object the picture is experienced as resembling is reasonably indeterminate—a table which is roughly oblong, no more. So let us consider under what conditions, if any, such a system would yield depictions of precise shape and other spatial features. They must be conditions allowing for the depiction of any of a wide variety of such shapes and arrays, or so our theoretical reflection suggests. So the rules of

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[13] This thought is really the offspring of Goodman's (1969) account of depiction. It ignores some of the difficulties of his view by restricting itself to certain sorts of property and by resisting the temptation to insist on infinitely precise representation. But the most significant difference is that I do not offer it as a definition of depiction, more a test for it. For another use of a similar thought, see Lopes 1996.

inverse perspective will have to allow for projecting a wide variety of such shapes/arrays onto surfaces. But if we are to appreciate the detailed content of the pictures thus created, it seems we must be sensitive to small differences between the way a given canvas is marked, and the ways in which it might have been. Now, those differences are precisely between marks which do not preserve the visible figure of what they represent, and their not doing so is important to their representing, according to the rules of inverse perspective, what they do. So an appropriate sensitivity to the relevant details of the surface markings cannot, in all psychological plausibility, accompany experiencing the marks as resembling, in visible figure, something with the precise spatial features in question. Thus, while the marks may depict something, and while they may systematically represent spatial detail, they do not depict that detail. The only conditions under which they would do so would be ones in which our psychology was quite different from how it in fact is.

Of course, inverse perspective fails in a radical way to preserve visible figure. However, any other way of marking surfaces which fails less spectacularly will also confront the basic problem here. So the resemblance view, coupled to our theoretical constraint on depiction and our sense of what is psychologically possible for us, does seem to preclude any depiction of spatial detail that is not depiction in perspective. If this conclusion seems outrageous, remember that it is restricted to a certain, highly special, form of pictorial content. Once one focusses that thought clearly, I think the conclusion loses its air of *reductio*, and starts to seem plausible. At least it allows us to say what is special about drawing in perspective. The Renaissance did not invent depiction, but it did discover a way to expand our depictive powers. For only with the articulation of perspectival drawing systems did we acquire the ability to depict space with precision.[14]

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[14] John Hyman (1992) has reached somewhat similar conclusions independently. It might be fairer to consider the Renaissance achievement one of rediscovery. See, for instance, White 1987.

One issue remains. Which systems are the perspectival ones? I am not sure what to say about this. If the speculations just offered are correct, we could pick them out as those systems permitting depiction of spatial detail. The cost of doing this, however, would be to trivialise my claim that perspective is not a matter of convention. For I made good that claim by saying that no rivals can solve the problem of depicting spatial detail, an assertion the proposed characterization would empty of content. What is needed, therefore, is a way of picking out the perspectival systems which renders my speculation plausible without trivializing it. I am not sure what, other than a list of particular systems, would do this. But I am also not sure that this is a particularly a problem for the position articulated here. I suspect that everyone who wants to talk clearly about whether perspectival systems have a special status will have to define which systems they mean, and to say, in independent terms, which problem those systems are intended to solve. Although this paper has not managed the first of those tasks, it has at least made an attempt at the second.

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