

# ON OUTLINING THE SHAPE OF DEPICTION

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## **Abstract**

In this paper, I discuss the account of depiction proposed by Robert Hopkins in his book Picture, Image and Experience. I first briefly summarise Hopkins's account, according to which we experience depictions as resembling their objects in respect of outline shape. I then ask whether Hopkins's account can perform the explanatory tasks required of an adequate account of depiction. I argue that there are at least two reasons for which Hopkins's account of depiction is inadequate. Firstly, the notion of outline shape, as Hopkins presents it, is inconsistent. Moreover, I argue that, while a consistent construal of outline shape is possible, Hopkins's account becomes indistinguishable from previous accounts of depiction under any such construal. Second, I argue that, however it is construed, the notion of outline shape is unable to explain one of the central features for which Hopkins himself insists any successful account of depiction must account.

## **1 Introduction**

The purpose of an account of depiction is to explain what properties a thing must have in order both to be a depiction, and to be a depiction of a certain object. The most intuitively appealing view holds that, in order to be a depiction of some object, a thing must look like that object. The notion of 'looking like' is often explained in terms of resemblance. However, there are various intractable problems with this view. One of these is that pictures can depict non-existent things, but they cannot resemble things that do not exist. Alternative accounts of depiction appeal to less problematic notions like convention, interpretation and information, but none of these enjoys the intuitive appeal of resemblance accounts. Experienced resemblance accounts, on the other hand, have the

intuitive appeal of resemblance accounts while overcoming many of their difficulties. Experienced resemblance accounts claim that, while a picture need not actually resemble its object, we must experience a thing as resembling some object in order for it to comprise a picture of that object. Because objects do not need to exist in order for us to experience things as resembling them, experienced resemblance provides a more promising means of explaining the notion of 'looking like' than actual resemblance.

However, we don't usually mistake pictures for their objects. Consequently, we cannot experience them as resembling their objects in every respect. Therefore, an adequate experienced resemblance account of depiction needs to specify in exactly what respect we do experience pictures as resembling their objects. In his book Picture, Image and Experience, Robert Hopkins argues that, while we may experience pictures as resembling their objects in a variety of different respects, the only form of experienced resemblance necessary for depiction is experienced resemblance in outline shape.<sup>1</sup> On his account, depictions are objects that are intended by their makers to (or are the result of causal relations that are exploited with the intention that their products should) represent the objects they are experienced as resembling in outline shape.

Outline shape is a shape feature that can be shared by relatively two-dimensional depictions and their three-dimensional objects because it abstracts from the dimension of depth. It is not an intrinsic property of an object, but is always relative to some point external to the object. Hopkins characterises an object's outline shape at a point as the solid angle it subtends at that point. The notion of a solid angle is a geometrical notion intended to provide a single term for the many angles subtended by the face of an object, to the point, in a series of planes that intersect both the point from which the angles are measured, and points on the face of the object.<sup>2</sup> The solid angle subtended by an object from that point is a three-dimensional combination of all the angles subtended in the individual planes.<sup>3</sup> Hopkins argues that two objects will resemble one another in outline shape to the extent that there is some point from which one object

subtends an outline shape similar to that subtended by the other object at some point.<sup>4</sup>

Hopkins stresses that an object's outline shape at a point is not to be equated with its silhouette from that point. Unlike an object's silhouette, its outline shape will include the nested outline shapes of any of its parts that face the point from which its outline shape is measured.<sup>5</sup> For example, the outline shape of a house, measured from a point in front of and to the left of its façade, will incorporate the outline shape of its left side, as well as the outline shape of its façade.

According to Hopkins, outline shape is a property that we experience things as having. His argument for this claim draws on the fact that, from certain points, we see objects as having shapes that we know they do not really possess. The two examples he gives are the converging edges we see roads as having when we stand looking down their length and the elliptical shape we see wheels as having when we see them from an oblique angle. He argues that, because these experiences do not represent their objects as having converging edges or as being elliptical, we cannot explain those experiences as involving the misrepresentation of their objects. Instead, he argues, these experiences are best explained as experiences of the outline shapes of their objects.<sup>6</sup>

Hopkins maintains that we experience objects as having outline shapes despite the fact that, strictly speaking, there is no single point from which we experience those objects. When we look at an object, we see it with two eyes that move around in relation to the object. Hopkins argues that we can nonetheless experience the object's outline shape as unchanged throughout this process, because the indeterminacy of vision in general entails a certain indeterminacy in our experience of outline shape, which means that the point from which outline shape is experienced will itself admit a corresponding indeterminacy.<sup>7</sup>

One objection to this account of depiction is that, while we may experience some 'linear' forms of depiction as resembling their objects in outline shape, we do not experience other, more 'painterly' forms as resembling their objects in this

respect.<sup>8</sup> In this paper, I will argue that there are several further reasons for which Hopkins's account of depiction does not succeed. I will argue that the notion of outline shape is inconsistent; that it is unable to explain all the features of depiction that an adequate account needs to explain; and that outline shape is not a feature of ordinary visual experience.

## **2 Explaining the Features of Depiction**

Depictions have several features that distinguish them from other representations. An adequate account of depiction must explain why they have these features. For example, central to our conception of depiction is the idea that 'a picture is worth a thousand words': that pictures are much richer in content than descriptions. This feature amounts to the following: pictures must depict their objects as having some properties, and these properties must be reasonably determinate.<sup>9</sup> For example, a portrait cannot depict Shakespeare without attributing some properties other than that of being Shakespeare to him. Moreover, the properties it attributes to him must be reasonably specific. For example, while it might depict him as having a sparse, dark beard and receding hair, it cannot depict him as having facial hair of some indeterminate type. Let us call this latter feature of depiction pictorial determinacy.

On Hopkins's account, pictures must attribute a certain outline shape to their objects. This explains the fact that pictures must attribute some properties to their objects. Let us now consider how Hopkins's account explains pictorial determinacy. Hopkins argues that the outline shape a depiction attributes to its object must be reasonably determinate because, if an experience of resemblance in outline shape is to occur, the outline shape of the depiction must be experienced as resembling that of the object it depicts rather than that of any other object.<sup>10</sup>

However, to provide an adequate explanation of pictorial determinacy, Hopkins needs to explain the determinacy of those properties other than outline shape that a picture attributes to its object. In order to explain this, he appeals to a second fact: that an object's outline shape is systematically correlated with

other of its properties. For example, he argues that properties such as three-dimensional shape and orientation correlate with outline shape. Hopkins terms such properties 'Correlators'.<sup>11</sup> He argues that, because of this correlation, the determinacy of Correlators will match that of outline shape. Consequently, because the outline shape we experience a depicted object as having must always be reasonably determinate, any Correlators we experience the object as having will also be reasonably determinate.<sup>12</sup>

In the following two sections of this paper, I will argue that this explanation of pictorial determinacy is inadequate. In the next section, I will argue that it points to an inconsistency in Hopkins's construal of outline shape. In the following section, I will argue that, even on a consistent construal of outline shape, it does not in fact correlate with three-dimensional shape and orientation.

### **3 Inconsistencies in the Construal of Outline Shape**

In his exposition of what outline shape is, Hopkins makes contradictory claims. Firstly, he claims that outline shape is a geometrical notion comprising the many angles an object's face subtends to a point. He also claims that, if the outline shape of an object at a particular point alters, then either its three dimensional shape or its orientation to that point must also alter.<sup>13</sup> These claims, together with his further claim that outline shape is not a visual notion and that invisible objects may have outline shapes,<sup>14</sup> suggest that the outline shape of an object is a purely geometrical notion that is determined entirely by the point from which it is measured, together with the three dimensional shape of the object and its orientation to that point.

However, Hopkins makes two claims that contradict this construal of outline shape. He claims that;

[o]utline shape is sensitive to the position of boundaries between areas of differing colour, if not to the particular colours those areas are. Thus the outline shape of a zebra differs from that of a small horse, even if the only

visible difference between the two lies in the former having stripes which the latter lacks.<sup>15</sup>

Elsewhere, he argues that outline shape can be affected by features, such as an object's surface patterning, that are not accessible to touch.<sup>16</sup> These claims suggest that outline shape is a partly visual and not a wholly geometrical notion. If the zebra is indistinguishable from the horse apart from its stripes, then dyeing both zebra and horse black should give them the same outline shape. However, this will not have changed either their three-dimensional shape or their orientation to the points from which their outline shapes are measured. Consequently, if Hopkins's claim that outline shape can be affected by surface patterning is correct, it cannot also be true that alterations to an object's outline shape at a point require alterations either to its orientation or to its three-dimensional shape.

Hopkins's construal of outline shape is therefore inconsistent. Moreover, each of its inconsistent aspects is important to his account's ability to explain depiction. In order for his explanation of pictorial determinacy to succeed, he needs to maintain a definite correlation between outline shape and three-dimensional shape and orientation. He cannot opt for a form of 'soft' correlation between outline shape and both surface patterning and three dimensional shape and orientation, as this would not be sufficient to explain why the three dimensional shapes and orientations objects are depicted as having are always reasonably determinate. However, in order to make sense of the idea that we experience depictions as resembling their objects in outline shape, Hopkins would do well to preserve his claim that outline shape is affected by surface patterning. This is because pictures are generally more-or-less rectangular. Consequently, unless the outline shape we perceive them as having were responsive to their surface patterning, we would perceive all pictures as having similar outline shapes. In this case, Hopkins's account of depiction would not get off the ground.

Nevertheless, there seems to be one way in which Hopkins might maintain a consistent account of outline shape as correlating with three-dimensional shape and orientation, while still explaining how we experience depictions as resembling their objects in respect of outline shape. It is here that the fact that Hopkins's account is couched in terms of experienced resemblance in outline shape becomes crucially important. Because Hopkins argues that outline shape is a real property of objects and, moreover, a property of objects that we normally perceive, it often seems as if his account of depiction depends on (non-intrinsic) resemblances whose existence is independent of our experiencing them. However, given that Hopkins presents his account as experiential, he does not need to maintain that objects actually possess (relative to a point) the outline shapes we experience them as having.

Thus, Hopkins could claim that, although we might, when viewing objects face-to-face, perceive the outline shapes they actually have from the point from which we see them, when we pictorially experience depictions of those objects, we experience the depictions as having outline shapes they do not in fact possess. According to such an argument, the outline shapes of depictions are vastly different from those of their objects, even though, when we pictorially experience them, we see them as having outline shapes similar to those of their objects. This argument would enable Hopkins to relinquish the claim that outline shape is affected by colour boundaries and surface patterning. He could instead maintain that only the outline shapes we perceive things to have are affected by colour boundaries and surface patterning.

The problem with this response, however, is that it does not allow Hopkins to explain his claim that the notion of outline shape is not just that of an object's silhouette. He argues that an object's outline shape differs from its silhouette because the outline shape of an object can include the nested outline shapes of its parts.<sup>17</sup> This can be seen by examining Hopkins's argument that a pyramid shares the same outline shape as a tracing of its outline on the window through which it is seen. He argues that the two faces of the pyramid that are visible through the window subtend different solid angles from the point from which the

tracing is made and that the solid angle subtended by the pyramid as a whole will be formed from those its two faces subtend.<sup>18</sup> He then argues that this nesting of outline shapes is shared by the tracing of the pyramid:

Provided the edge of the pyramid formed by the junction of the two faces has been traced, the tracing will subtend the same solid angle as the whole pyramid, and within that angle it will subtend two smaller solid angles, which match those subtended by the two faces.<sup>19</sup>

Hopkins motivates his account of depiction by claiming that the notion of outline shape captures a respect in which the pyramid and its tracing resemble one another. However, according to this explanation, it is only in virtue of surface patterning on the tracing of the pyramid that the solid angle it subtends comprises the solid angles subtended by two distinct parts. As soon as Hopkins relinquishes his claim that an object's outline shape is affected by its surface patterning, therefore, he is left unable to explain how the outline shape of an object might include the nested outline shapes of its parts, and therefore to explain how the notion of an object's outline shape differs from that of its silhouette.

Hopkins's notion of outline shape is either incoherent, or is equivalent to that of an object's silhouette. If Hopkins is unable to provide a coherent explanation of how an object's outline shape correlates with both its three-dimensional shape and orientation and with its surface patterning, I believe that his best option is to relinquish the claim that the outline shape of an object contains the nested outline shapes of its parts and to accept a construal of its outline shape as equivalent to its silhouette. In this case, his account of depiction will not differ in anything but detail from John Hyman's proposal that we experience depictions as resembling their objects in respect of their occlusion shapes, where occlusion shapes are to be understood as objects' silhouettes.<sup>20</sup> However, there is a further reason to reject the claim that we experience

depictions as resembling their objects in either outline shape or in silhouette. This claim does not fit with our knowledge of human perceptual psychology.

#### **4 The Determinacy of 3-D Shape**

Hopkins grants that, although outline shape is relative to a single point, we see the world through two, continually-moving eyes.<sup>21</sup> He argues that it nonetheless makes sense to talk of our seeing the outline shapes of objects, because vision in general only obtains a certain level of determinacy. He claims that, in binocular vision, the point at which an object is represented as having its outline shape is indeterminate enough to incorporate the positions occupied by both eyes, including any positions each might occupy while the object's outline shape is experienced as unchanged.<sup>22</sup>

What Hopkins's claims about the indeterminacy of vision do not take into account, however, is that fact that, as far as vision in general is concerned, the disparity between the positions of each of our eyes, and the movement of our two eyes in relation to the objects of perception, serve to make our perception of those objects more, rather than less, determinate. The process of stereopsis, which correlates information from each of our two retinal images, enables the distance from a viewed object's various features to the viewer to be calculated and thus enables the three-dimensional shape and orientation of the viewed object to be represented.<sup>23</sup> It does so because the disparity between the position of a particular feature on each retina will be greater the closer that feature of the object is to the viewer. However, it can be difficult to establish exactly which features on one retinal image correspond to what features on the other retinal image.<sup>24</sup> Different angles of view can produce differences in the light reflected from objects and distortions in the shape of those objects. In order to enable a unique matching of features, therefore, features are initially matched at the largest scale, at which the disparity between each retinal image is the smallest, and the features thus matched are then used as a guide for further eye movements that operate to alter the images so as to facilitate a matching of features at all scales.<sup>25</sup>

Consequently, the more our eyes move in relation to an object, the more determinate the three-dimensional shape we perceive the object to have becomes. Contrarily, the more our two eyes move in relation to a perceived object, the less determinate the outline shape we perceive the object as having becomes. The fact that the determinacy of outline shape decreases as the determinacy of three-dimensional shape increases shows that perceived outline shape does not correlate with perceived three dimensional shape and orientation. Outline shape will be at its most determinate when three-dimensional shape is at its least determinate, and vice versa. Consequently, Hopkins cannot explain the determinacy of three-dimensional shape properties as a direct result of the determinacy of outline shape.

One might think that he could explain the determinacy of such properties in the same way as he explains the determinacy of colour properties. He uses an argument analogous to that which he gives for the determinacy of depicted outline shape to argue that, in order for an experience of resemblance in respect of colour to occur, the colour an object is depicted as having must be reasonably determinate.<sup>26</sup> The idea here is that, if an experience of resemblance in colour is to occur, the colour of the depiction needs to be reasonably determinate in order to be experienced as resembling the colour of the object it depicts rather than that of any other object.

This argument will not work for three-dimensional shape. Hopkins wants to maintain that outline shape is the only respect in which resemblance must be experienced between a depiction and its object. His argument for the determinacy of colour properties is a supplementary argument for the determinacy of properties that an object need not be depicted as possessing. However, because it seems that all depictions must attribute three-dimensional shape properties to their objects, even if they are not experienced as resembling their objects in respect of three-dimensional shape, this option is not available to Hopkins. Consequently, the failure of his explanation of the determinacy of depicted three-dimensional shape properties is a serious problem for his account.

Moreover, the failure of this explanation raises the question of whether it is plausible that, as our eyes move during the process of perception, we come to see objects of an increasingly determinate three-dimensional shape and simultaneously come to see those objects as having outline shapes that are less and less determinate. Given that we never perceive objects as having completely determinate outline shapes and that the determinacy of the outline shapes we perceive objects as having decreases as the determinacy of vision in general increases, there is little compelling reason for believing that outline shape is a general feature of visual experience.

Hopkins argues that our perceiving outline shapes is the best explanation of the fact that we see the edges of roads as converging in the distance, and of our seeing wheels as looking elliptical. However, it is not clear that the perception of outline shape is the best explanation of these phenomena and, even if it were, this does not demonstrate that outline shape is a general feature of visual experience, rather than a feature restricted to a narrow subset of visual experiences. Unless Hopkins provides us with reason to believe that, contrary to the evidence from visual psychology, outline shape features in our everyday visual experience, it is difficult to see how outline shape can form the basis for an adequate experienced resemblance account of depiction.

## **5 Conclusion**

In this paper, I have argued that Hopkins's account of depiction fails because the notion of outline shape is inconsistent and is unable, even in its most consistent reinterpretation, to explain pictorial determinacy. Moreover, I have suggested that outline shape is not a general feature of visual experience.

If an experienced resemblance account of depiction is to succeed, it must specify some respect in which we experience all pictures as resembling their objects, and must explain the various features of depiction by appeal to experienced resemblance in this respect. The inability of the notions of outline shape and silhouette to ground adequate experienced resemblance accounts of depiction may seem to indicate the inadequacy of all experienced resemblance

accounts. It is difficult to imagine any other respect in which we experience all pictures as resembling their objects that would provide the means of explaining all the features of depiction.

Since the notion of experienced resemblance seems to provide the only alternative to that of resemblance as a way of cashing out the idea that pictures 'look like' the things they depict, the failure of resemblance accounts would indicate the failure of the most intuitively appealing view of depiction. However, I think it is possible to give an adequate and intuitively appealing explanation of depiction in terms of experienced resemblance. The underlying fault with Hopkins's account, as with other experienced resemblance accounts, lies in grounding his account in a respect of experienced resemblance that is too particular to be a general feature of the great variety of different experiences we have of pictures as pictures. The challenge is to identify some respect of experienced resemblance that is general enough to feature in every pictorial experience, but that successfully avoids the collapse into illusionism that would result if it were not restrained in any way.<sup>27</sup>

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<sup>1</sup> Robert Hopkins, Picture, Image and Experience (Cambridge: Cambridge University Press, 1998).

Alternative experienced resemblance accounts are proposed by Christopher Peacocke in 'Depiction', Philosophical Review, XCVI, no. 3 (1987); John Hyman in 'Perspective', in A Companion to Aesthetics, Cooper (ed) (Oxford: Blackwell, 1992); and Malcolm Budd in 'On Looking at a Picture', in Psychoanalysis, Mind and Art, Hopkins and Savile (eds) (Oxford: Blackwell, 1992).

<sup>2</sup> Hopkins, Picture, Image and Experience, p.53. Hopkins has more recently abandoned his definition of outline shape in terms of solid angles in favour of one in terms of sets of directions from a point (see Robert Hopkins, 'Perspective, Convention and Compromise' in Reconceiving Pictorial Space Atherton, Schwartz

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and Hecht (eds), ( Massachusetts, MIT Press 2003). However, as this revision is not material for present purposes, I will retain the definition given in Picture, Image and Experience to ensure consistency with the view presented there.

<sup>3</sup> Hopkins, Picture, Image and Experience, p.55.

<sup>4</sup> Hopkins, Picture, Image and Experience, p.55

<sup>5</sup> Hopkins, Picture, Image and Experience, p.57.

<sup>6</sup> Hopkins, Picture, Image and Experience, p.59

<sup>7</sup> Hopkins, Picture, Image and Experience, p.62-63.

<sup>8</sup> This point is made by Richard Wollheim, ‘What Makes Representational Painting Truly Visual?’, Proceedings of the Aristotelian Society Supplementary Volume, LXXVII (2003).

<sup>9</sup> This feature of depiction is noted by Flint Schier in ‘Van Gogh's Boots: The Claims of Representation’, in Virtue and Taste: Essays on Politics, Ethics and Aesthetics, Knowles and Skorupski (eds), (Oxford: Blackwell, 1993), and is first noted by Hopkins in ‘Explaining Depiction’ Philosophical Review 104 (1995).

<sup>10</sup> Hopkins, Picture, Image and Experience, p.79.

<sup>11</sup> Hopkins, Picture, Image and Experience, p.82.

<sup>12</sup> Hopkins, Picture, Image and Experience, p.82. This leaves the issue of how the determinacy of non-correlating properties is to be explained. I will discuss this issue in Section 4.

<sup>13</sup> Hopkins, Picture, Image and Experience, p.114.

<sup>14</sup> Hopkins, Picture, Image and Experience, p.133.

<sup>15</sup> Hopkins, Picture, Image and Experience, p.85, note.

<sup>16</sup> Hopkins, Picture, Image and Experience, p.134.

<sup>17</sup> Hopkins, Picture, Image and Experience, p.57.

<sup>18</sup> Hopkins, Picture, Image and Experience, p.57.

<sup>19</sup> Hopkins, Picture, Image and Experience, p.57.

<sup>20</sup> Hyman, ‘Perspective’.

<sup>21</sup> Hopkins, Picture, Image and Experience, p.62.

<sup>22</sup> Hopkins, Picture, Image and Experience, p.62-63.

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<sup>23</sup> David Marr, Vision (San Francisco: W.H. Freeman and Company, 1982), 111.

<sup>24</sup> Marr, Vision, p.112.

<sup>25</sup> Marr, Vision, p.130-140.

<sup>26</sup> Hopkins, Picture, Image and Experience, p.87.

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