Two Visual Systems and the Feeling of Presence

Mohan Matthen
University of Toronto

When I look down at my hands right now, it looks as if they are working on a black computer keyboard. There is something about my visual state that makes it seem as if the keyboard is really there, and that it is really black. My visual state would be inaccurate, or false, if this were not the case.

When I am relaxing in an armchair, I can close my eyes and summon up a fairly detailed and vivid image of my hands on a black keyboard. This state of visual imaging is different from my present visual state. It does not make it seem as if the keyboard is really there, nor that it ever was, or that it is really black. I could just as well summon up an image of my hands playing on a piano: I know I never did play the piano; hence, it is immaterial, as far as the veracity of this image is concerned, what colour the keys rae. (Here and in what follows, I shall use ‘visual state’ to mean states that arise from looking – visual imaging does not fall under this term as I am using it here.)

What is the difference between these two states? Why does the keyboard have (as I shall say) a feeling of presence in my present visual state, but not in the state of visual imaging? In this paper, I employ the Two Visual Systems theory to offer a partial answer to this question. Though this answer addresses only one aspect of the feeling of presence, which very likely traces to many different cognitive processes, it reveals something important about how the two visual streams function.

The problem that I want to tackle in this paper concerns the origin and semantic significance of the Feeling of Presence. It might well be that this feeling attaches to a scene only when that scene has been identified as really there (and not
just depicted). Thus, the visual system might have to solve the problem of whether what is seen is real before it attaches the Feeling of Presence to things it determines to be real. My problem, though, is not so much the conditions under which the visual system certifies something as present and real, or the method by which the visual system proceeds to such certification. My problem is rather the meaning of the feeling of presence. What exactly is it?

I. Introduction: Content-Directed Attitudes

A. Visual experience tells the viewing subject something descriptive about her surroundings. For instance:

I know by looking that somebody on my left is looking at me and extending his hand.

Two caveats:

a. The italicized portion of the displayed sentence above – the part after ‘that’ – expresses in English a part of what vision tells me about the world. No sentence will express all of what vision tells me in a normal scene.

b. Vision tells me this in its own expressive medium, i.e. in visual qualia, not in English.¹ (The fact that visual imagery is involved will turn out to be important in what follows.)

I shall entitle this descriptive component of a visual state its content.

B. Generalizing from the above: visual states are content-directed attitudes. That is, they can be expressed in the following form:

¹ Vision is restricted with regard to what it can tell you. People sometimes say things like: “I see that you like to drive fast”. What they mean is that they infer from what vision tells them (as well as other sources of information) that you have this tendency. My claim here is that there are things that vision tells you directly, without the need for such inference on your part.
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Subject + attitude + content.

For the example given above can be analysed in the following way:

I (subject) + see (attitude) + [that + somebody on my left is looking at me and extending his hand] (content).

Here are some other content-directed attitudes:

Anand (subject) + believes (attitude) + [that + it will rain tomorrow] (content).

Kwame hopes that it will be a pleasant summer.

Anand’s belief and Kwame’s hope are propositional attitudes: these have been extensively discussed in the philosophical literature. Here, I emphasize that they are a species of content-directed attitudes. Treating visual states under this rubric allows us to bring certain well-known tools of philosophical analysis to bear on them.

C. Certain propositional attitudes, such as belief, present their content as actual. Belief above is an example: Anand’s embodies his commitment that tomorrow will actually be rainy; it purports to Anand the actuality of rain tomorrow; it would be false if it didn’t rain tomorrow. Hope, by contrast, does not represent its content as actual: Kwame’s state does not purport that summer will be pleasant, and so his hope would not be false if summer turned out not to be pleasant; indeed, hope is not (for just this reason) properly considered true or false. Of course, it is either true or false that Nadine hopes that summer will be pleasant: the point is that her hoping this does not imply that summer will in fact be pleasant.

2 Of course, it is either true or false that Nadine hopes that summer will be pleasant: the point is that her hoping this does not imply that summer will in fact be pleasant.
D. Committing and non-committing attitudes can share content. Koko can both believe and hope the same content: for instance, that she will soon be able to afford to give her mother an expensive present. Her belief is committing but her hope is not. Since these mental states share the same content, the difference between them – that one is committing and the other is not – must trace to the nature of the attitude. This implies that commitment pertains to attitude. Hope attaches non-committing force to the content, while belief attaches committing force to it. (Of course, attitude carries more than commitment or its contradictory: hoping that summer will be pleasant is not the same as imagining it. Neither of these attitudes is committing, but they are different.)

E. Seeing is committing in the sense given above: visual states purport to describe what is really there, and they are false or inaccurate if the description they offer is not actually the case. Equally, it is obvious that visual imaging is not committing: visually imaging does not purport actuality. It follows from D. that this is a difference of force pertaining to attitude. In this paper, I shall try to show that the Two Visual Systems theory can account for this difference of force between seeing and visual imaging.

II. Cognitive Feelings

A mental state is sub-personal if it is generated by the brain without the full control of the subject’s rational faculties of assessment and choice. Perceptual states and emotions are sub-personal; complex, well-articulated beliefs and rational plans, by contrast, are normally under the subject’s full control. It is clear why belief is committing. To believe a proposition just is to assess it as true. But how do sub-personal states such as perception, memory, and emotion get their attitudinal character? The subject is not in control of the process by which these states are generated; she is aware only of the end-result. What is it about states like these that constitutes their attitude? This is the question taken up in the present section.
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Having established some general approaches to the topic, I’ll return in the following section to the question about seeing.

(A) States of episodic memory are characterized by what one might call a feeling of pastness; this distinguishes them from states of semantic memory, for example. You probably remember some incident in your childhood when you were in trouble with your teacher (T). You can recall the classroom in which it occurred, the teacher’s look and voice, your own feelings, and so on. You may also remember some journey you took with your family at roughly the same time (J).

1. The content of these memory states, T and J, is very different. But both are presented as having occurred in the past.

2. The content of each of these memory states is an image. For present purposes, this may be construed as follows: the content of the states is spatio-temporally formatted. Every item presented in the content is presented as spatially located relative to every other item presented, and if the image is temporally extended, then the same holds for temporal location.³ (Note, however, that presented items need not be located relative to the observer of the image: sometimes they are, sometimes they are not.)

3. Images of past events do not contain any element that differentiate them from images concerning the present or future. Pastness is not a visual idea, nor does it belong to any other sensory modality. In fact, a remembered image is ideally the same as that which was sensed when the remembered incident actually occurred. This implies that it can’t have a component that marks it as past.

³ Note that on this construal, the proposition “Rome is 800 km south of Paris” is an image. Though it shows that spatiotemporal coding is not sufficient for something to be an image, I am not bothered too much by this in the present context. The criterion of spatiotemporal coding is interesting only when a large number of things is presented. However, one could add the requirement that images are analogue representations. (See Dretske 1981, chapter 6, for analogue representation.)
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4. That the imagistic content of episodic memory is presented as being past is, therefore, not a matter of what the image contains, but something about how the image is entertained. In other words, the imagistic content of T and J are entertained in a way that gives them their past-positing quality.

5. Though the feeling of pastness is not part of the content of these memory states, it has representational significance. For there is obviously a semantic difference between “I was in trouble with my teacher” (Past T), and “I am in trouble with my teacher” (Present T) – and this exactly is the difference between your episodic memory of T and the imagistic experience of T that you suffered at the time it occurred. The feeling of pastness characteristic of episodic memory states represents the tense in Past T.

6. The feeling of pastness differentiates episodic memories from semantic memories. You remember that (P): Paris is the capital of France. There is nothing past-like about P, and also nothing imagistic. In the first place, it is a present fact that you remember in this case, not a past one. (You can even remember a future fact in this way: that you have a meeting with your doctor tomorrow.) Moreover, you do not remember the occasion when you learned this – and even if you did, this would be a different memory state than regarding P. Your memory of P is semantic memory; semantic memory is characteristically not imbued with a feeling of pastness, while episodic memory is.⁴

These characteristics of the feeling of pastness point to a neglected, yet extremely important, feature of mental states whose content is “imagistic” in the manner of perceptual states, namely that some semantically significant material gets into the content-directed attitude itself. Episodic memory can be expressed as follows:

⁴ Of course, semantic memory has a connection to the past: your belief in P rests in some way on some past incident, the occasion of learning. My point is that remembering this occasion is in no way a part of the memory that P.
Subject + episodically remembers (attitude) + sensory image (content)

The point that I want to make is that the feeling of pastness is a characteristic of the attitude not of the content above. (Points 3-5 above.)

Now, the difference between believing T and believing past-T finds its way into belief content. For in the case of belief or semantic memory, we can present a past tense belief equivalently in one of two ways:

\[ X \text{ believes that } \left[ \text{Past } (S \text{ is } \text{UNTENSED } F) \right] \]

\[ X \text{ believes that } [S \text{ was } F]. \]

In both cases, the past tense is part of content – the manner of believing is the same in both cases, though the structure of what is believed is different. But since the content of episodic memory is an image, the above styles of presentation are ruled out. Thus, we get:

\[ X \text{ remembers}_{\text{PAST}}: S \text{ is } \text{UNTENSED } F. \]

The feeling of pastness is not a judgement that we make about a stored image. Experiencing an episodic memory is not like going through a photo-album and using one’s written records and discursive powers to write a date below each picture. The feeling of pastness is generated sub-personally. Episodic memory is, in and of itself, an experience of an image as in the past.

The separateness of content and pastness attached to content is attested also by stories such as that of a painter, Franco Magnani, related by Daniel Schacter (1996, 28-31). Magnani suffered a strong fever accompanied by delirium, and after that began to dream of his childhood village of Pontito in Italy. His dreams had a “hallucinatory intensity with a wealth of minute detail,” says Schacter. Magnani later captured some of his dream images in paintings, and it was confirmed that these paintings are accurate: in fact, they contain a multiplicity of perspectives characteristic of painting but impossible to reproduce in photographs – an
accurately placed flowerbed impossible to see from the perspective portrayed – suggesting that the dreams incorporated movement around the scene.

Now, vivid dreams do not present themselves as memories but as current experiences. Thus, Magnani’s dreams seem to present content that is in fact remembered under a non-memorial attitude – a shuffling of content and attitude that proves their independence. Further, the fact that these dreams occurred after delirious episodes suggests that they are the result of brain damage. Thus, one might conclude that content and attitude are separately generated. This in turn is confirmed by studies that show that patients with damage to the prefrontal cortex show a diminished capacity to remember the episodes in which they learned facts that they remember. (Wheeler 2000). We all normally repress the sources of our knowledge. (Do you remember learning that 2 times 6 is 12?) These lesions, however, magnify the dissociation: patients forget where they learned lists and captioned pictures in just a week, though they had no trouble remembering the lists themselves.

(B) Here is another example, somewhat different in structure. Patients who suffer from Capgras syndrome think that people who live with them – their spouses, for instance – are impostors. This is not a matter of failing to register the look of their spouses’ faces. These unfortunate patients know that the person they see resembles their spouses, and will even acknowledge that they resemble them exactly. Moreover, they do not suppose that people other than their spouses – their medical attendants, for example – are impersonating their spouses.

In the case of selective deficits such as this one, cognitive neuroscientists infer that some component of normal brain function is damaged. Capgras syndrome shows that the normal human visual capacity to recognize other humans does not consist just in recognizing that one face resembles another. (Capgras syndrome is specifically visual: patients do not think that the telephone voice of their spouse is that of an impostor.) Face-recognition has two logically independent components:
(This person looks like x to the n\textsuperscript{th} degree) AND (This person is x).\textsuperscript{5}

Let’s say that when we realize that somebody is x we properly recognize them, and that when we realize that they look like x, we “register the face-similarity metric”. In Capgras syndrome, the face-similarity metric is dissociated from recognition proper.\textsuperscript{6}

Now, the fact that the face-similarity metric is in place shows that the problem in Capgras’ syndrome cannot be visual. A number of neuroscientists (H. D. Ellis and A. W. Young [1990], V.S. Ramachandran [Ramachandran and Blakeslee 1998, chapter 8] and Max Coltheart [2005 and elsewhere]) have suggested that what is damaged in Capgras patients is an autonomic affective response. Normally, one responds strongly to people one knows intimately, because of the wealth of associations and expectations that these people trigger. Capgras patients are faced with the troubling experience of seeing somebody who looks just like their spouse, but of not experiencing a strong emotional response to them. To “explain” their own reaction, Coltheart says, they arrive at the belief that the person in question is not their spouse. Ramachandran takes a similar view. The view is that the delusion has a “cognitive” or inferential component.

I want to stay detached from the “explanation” hypothesis, focussing only on the claim that there is no appropriate level of emotional arousal in these patients. I

\textsuperscript{5} Clearly, it is consistent to think that somebody resembles x but is not x. It is also consistent to think that somebody does not look like x (as one remembers x), but is actually x.

\textsuperscript{6} When two normally associated cognitive capacities are asymmetrically damaged in patients with lesion-induced deficits, neuroscientists infer that the brain processes responsible for these capacities are sufficiently separate in location that the lesion compromises one while sparing the other. In fact, the face-similarity metric and the arousal response are double dissociated – though they are normally associated with one another, each is spared in some patients in which the other is damaged. For in addition to Capgras patients whose face-similarity metric is spared, there are patients with acquired prosopagnosia – a face-similarity metric deficit associated with lesions in the fusiform gyrus – who respond non-visually to their spouses. (See Bergeron and Matthen 2006 for a review of modularity inferences from dissociations.)
said that since the face recognition metric is in place, the visual image must be the same. So, the difference must lies in the attitudes. Let’s say, therefore, that the visual state of a Capgras patient, C, is a content-directed attitude of the following form:

\[ C + R + \text{visual image of spouse}. \]

Let’s say that before the onset of the affliction, C was in a different kind of state:

\[ C + R' + \text{visual image of spouse}. \]

If Ramachandran and Coltheart are right, the actual difference between the attitudes is one of emotional arousal. This would imply that this emotional difference has a semantic significance beyond itself. In Capgras patients, emotional non-arousal means that the person being viewed is not (though she looks like) the patient’s spouse.

In normal people, the arousal component of face-recognition is cognitively penetrable by evidence that the person is not the same as the one whom she remembers. Imagine somebody who has the experience of recognizing her lover NN, but is presented with strong evidence (driver’s licence; phone call from the absent NN professing to be hundreds of miles away, etc.) that it is in fact NN’s twin sister MN. Then, perhaps, the arousal component weakens, and the state no longer has the feel of NN-recognition. This would mimic the state in which Capgras patients find themselves. The person looks like their spouse, but does not elicit the appropriate level of response. Consequently, their experience does not have the feel of recognition. (This is, in addition, deeply disturbing to them since the person who looks like their spouse seems to have taken their spouse’s place in their homes, etc.) This is the non-imagistic difference between a resemblance-experience (such as the one that Capgras patients suffer, and also the MN-experience above) and a recognition-experience. This difference carries semantic significance, but it is not part of the imagistic content.
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(C) One other example of a cognitive feeling may be mentioned briefly; this time imagistic content is not involved. Antonio Damasio (1995) notes that some patients who suffer lesions of the ventromedial portion of the prefrontal cortex are unable to formulate a plan of action and carry it through to execution, and suffer, moreover, a lack of emotional affect. However, when only this portion of the brain is damaged, it appears that many forms of rational processing are spared, including those that lead to the social and moral assessment of hypothetical scenarios. Thus, it appears, the lack of decisiveness is associated not with the inability to assess a situation, but from a disengagement of motivation. Conversely, there are many lesions of dorsolateral prefrontal cortex which result in deficits of rational processing but not necessarily in flatness or lack of emotional response (Milner 1964). In summary:

<table>
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<tr>
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<th>Emotional Affect/Decisiveness</th>
<th>Rational Assessment of Social/Moral Scenarios</th>
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<tr>
<td>(Some) ventromedial lesions</td>
<td>Impaired</td>
<td>Spared</td>
</tr>
<tr>
<td>(Some) dorsolateral lesions</td>
<td>Spared</td>
<td>Impaired</td>
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Consider a proposition such as: It is good to give money to charity. There are people (with ventromedial lesions) who are able to reason to such conclusions, but are either too distracted by other projects or just plain disinclined to act upon them. They are motivationally flat. Consider, on the other hand, motivationally potent states that are not associated with the endorsement of an It is good to proposition – irrational anger or inappropriately louche behaviour are often examples of this. There are people (with dorsolateral lesions) who will display such behaviour to an abnormal extent, though they have no inclination rationally to endorse propositions that would justify such behaviour.
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As noted with the earlier examples, these are merely exaggerated versions of failures of rationality we all fall into from time to time. Having read Peter Singer, I have resolved time and time again to give 5% of my income to charity (less than he recommends, by the way). Time and again, I fail to do so. On the other hand, I am sometimes inappropriately irritated with people who commit minor offenses against taste and propriety, such as taking up more of an airplane armrest than they are entitled to, or honking their horn at me when I not doing anything illegal, though I have never succeeded in rationalizing such feelings. (In fact, I strongly believe that it would be good to be unaffected by such behaviour.) Such lapses of practical rationality seem to indicate – as Aristotle long ago realized – that the knowledge that something is good (or bad) is often causally neither sufficient nor necessary to be motivated to pursue (or avoid) it.

What is the difference between two men both of whom judge that it is good to give money to charity, but only one of whom actually does so? Is it that the donor has an additional belief – for instance, the belief that his own preferences would be better served if he gave money? No, because it is notorious that even this additional belief will not necessarily secure the action. Additional content does not fix the problem. Nor is the donor marked by an additional desire – I really want to give 5% of my income to charity; I just never end up doing so. The lesion evidence cited by Damasio suggests a special form of processing that enables the translation of moral belief into moral action. Perhaps the moral belief has to be entertained in a certain way for it to result in reasoned action; perhaps, this results in a feeling of motivation, a manner of entertaining the content of these moral beliefs that gives them greater motivational force. The lesion evidence mentioned above gives some credence to the speculation that parts of the brain other than those involved in forming the content itself are involved in attaching to that content a certain motivationally relevant attitude. Independently of the credibility of this suggestion, my treatment of this example illustrates how the content-attitude distinction helps set up the phenomenon.
In this section, we have seen that mental states can be represented as an attitude taken up by a subject with respect to a certain content, which may be a proposition or an image. Both differences of content and differences of attitude make a difference to the semantic significance of the mental state. I have attempted to illustrate, by reference to three examples, the kinds of evidence we can appeal to in order to show that differences of attitude are involved, as opposed to differences of content. In these examples, I have further suggested that the parts of the brain that are involved in forming content, on one hand, and determining attitude, on the other – that these parts of the brain may be distinct. In the following section, I deploy these ideas in examining how the two visual systems contribute to the feeling of presence.

III. The Feeling of Presence

Definition A cognitive feeling C is a subpersonally generated, phenomenologically accessible feature of a mental state S that imparts to S semantic or practical import different from that of another state S’, though S and S’ have the same content. The difference of import between S and S’ is accounted for by construing the feeling as a propositional operator (or neustic as R. M. Hare 1952 called it) that operates on the content of S.

The attitudinal forces identified in the preceding section are instances of cognitive feelings. My aim in the rest of this paper is to characterize a cognitive feeling that accompanies ordinary visual states – the Feeling of Presence.

Traditionally, philosophers influenced by empiricism have given a rather impoverished account of the representational content of visual experience – their account has often been that we experience nothing but the distribution of colour and brightness across a two-dimensional field. More recently, many philosophers have found themselves dissatisfied with this account. In vision we experience a scene consisting of discrete objects and their properties, including location. In
addition, we see a great variety of overlapping objects: not only material objects, but shadows, patches of light, films, stains, vapours, three-dimensional regions of illumination or darkness, reflections, and more. As far as visual properties are concerned, we directly see shapes, motion, and faces (as the evidence alluded to in section I above shows). The idea of vision presenting only colour patches arrayed in a two-dimensional field is now being abandoned: it is increasingly widely acknowledged that we see visual objects in three-dimensional locations, and, moreover, that where there are no objects to see, we do not see anything – we do not see unfilled visual field places. For instance, I simply don’t see anything in between me and my computer screen.\(^7\)

My claim is that normal (or “real life”) scene vision – the vision that one enjoys in a normal everyday setting, looking out of window or around a room, for instance – carries a cognitive feeling that I call the Feeling of Presence. As with the cognitive feelings discussed in the preceding section, I shall try to bring out the significance of the Feeling of Presence by contrasting scene vision with a contrast case in which the content can be quite similar – pictorial vision. I shall argue that despite the similarity of content, the representational (or “semantic”) significance of normal scene vision is very different from that of the contrast case. Normal scene vision is actuality-committing; pictorial vision is not. I account for this difference by a difference of attitudinal force, marked by the Feeling of Presence. The difference is not one of content, but just as in the examples discussed earlier, it is one of attitudinal force. Some philosophers have, as we shall see, attributed the difference to one of content, but I shall argue that as a result they get committed to vision having non-imagistic content – which is a problem for them.

\(^7\) One person who disagrees with this last claim is Roy Sorensen (2008). He thinks that we see holes, and he has suggested to me in conversation that we might by the same token see gaps between objects. I agree that we see holes. However, I would contend that holes are features of objects, whereas gaps are not. So there is a difference.
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When we look at a picture, we see (i) the picture itself, a two-dimensional surface bearing coloured marks, and at the same time (ii) depicted three-dimensional objects in the picture. The case that I wish to use as a contrast for normal scene vision concerns the second – the scenes and objects we see in pictures. Seeing an object in a picture is phenomenologically very different from seeing it in real life, or normally. For, as I just mentioned, pictorial vision is not actuality-committing, while real-life vision is. Yet these two kinds of object-vision can be imagistically very similar. Since the similarities between real-life and pictorial images can be increased asymptotically without making the objects seen in pictures seem present, it would be a mistake to try to pin the difference between the two kinds of vision on whatever differences may exist. This contrast will help us understand something important about normal scene vision. (I don’t think it makes much difference whether we consider stills or movies here, but I’ll concentrate for the most part on stills.)

There are, of course, many differences between seeing objects in real life and seeing them in pictures. One of these differences is particularly diagnostic for my approach. The real life objects you see seem connected to you in space; the objects you see in pictures do not. Imagine a picture (or a flat screen TV) on the wall, representing people you know sitting in a room. Contrast this with a window in the wall through which you can view people sitting in the room next door. The two scenes could be the same. Of course, the scene in the picture will never exactly resemble the scene through the window. Nonetheless: no matter how close the picture comes with respect to the projection it throws on your retina, there will be a sharp difference between the two visual experiences. When you view the pictured scene, the people look spatially disconnected from you. When you view the scene

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8 Of course, one can be fooled by a picture. Usually, this is a matter of context: for instance, the boundaries of the picture have to be hidden. The claim that I am making here is only that the difference between pictorial images and images in real vision cannot account for the major differences between pictorial seeing and real-life seeing.
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through the window, they do not. There is nothing about the picture that tells you where the people are, or even if they are anywhere.

Think of a picture of objects and people you recognize: a picture of people around a dinner table, or a still-life of edible fruit. Where are these things? You may know, of course, because you may recognize the room or the occasion. But putting this aside, the picture by itself offers no help. When you actually look at the same scene, the answer is obvious: the people are there. You know how to get to them: you know where they are relative to yourself; you can assign them egocentric coordinates. In the case of depicted objects, they could be anywhere, indeed they could be nowhere. You have no idea how to get to depicted objects – the picture simply does not and cannot give you the information; it does not even purport to do so. Nor are they at any definite distance away; they don't appear to get closer when you walk up to the picture. Objects in the picture stand in spatial relations to each other, but pictorial vision does not present them as spatially connected to real objects. Of course, you know where the picture is, and how to get to it, but this is a different matter. The picture is a real-life object that you see in a real life way. It “feels present”, to put it in the language I have been using. But objects in the picture have no location relative to you, the viewer.

Of course, there are pictures that, viewed from a certain angle, seem to offer a real-life view of the objects in them – trompes l’oeil as they are called. When pictures deceive you in this manner, the objects in them seem as if they are in the same space as you. When they do not deceive you, you may admire the fidelity with which they represent seen objects, but those objects do not seem to occupy the same space as you. Consider a wall-painting that looks from a certain angle to be a window through which you can see trees, water, sky. This picture fools you when and only when these objects seem to be outside and beyond the wall. When your perspective on the painting makes it obvious that it is just a painting, the trees look life-like, but located nowhere in your space. The Feeling of Presence, which defines
normal scene vision, is, among other things, a visual feeling of spatial connection. Pictorial vision is characterized by a feeling of spatial disconnection.

This is where we are. First, there is a phenomenological difference between real-life seeing and pictorial seeing: real-life seeing is actuality-committing; pictorial seeing is not. Second, the difference does not seem to be a matter of image-similarity, since it survives increases in the latter. Lastly, there is a further associated phenomenological difference in that real-life seeing gives the subject a felt spatial connection to seen objects, but pictorial seeing does not.

IV. Diagnosing the Feeling of Presence

One theoretical problem that arises with respect to seeing-in-pictures is how the visual system is able to differentiate between a depicted object and an object which is actually present. This is something of a puzzle, given the similarity between the retinal image thrown by the picture and that which would be thrown if things were as depicted. Here is what is difficult to understand – Why does this similarity not induce an illusion? Why does greater fidelity not induce a greater temptation to take the depicted for the real?

There are a number of relevant factors here, though I shall be arguing that they do not tell the whole story, because they are all differences of degree and as such they do not answer the questions asked in the preceding paragraph.

In the first place, there is a duality of seeing in the case of pictures, as mentioned earlier. When we look at a picture, we see two things: a surface with coloured marks or lights (the physical picture itself) and a depicted scene. Obviously, looking at a real scene (with no pictures in it) is nothing like this. There are none of the indications of coloured dyes on paper, no brush strokes, no glossiness or other texture of the paper or canvas, etc. This difference is relevant to knowing that the picture is a picture and the real scene is not. However: increase or decrease the visibility of these characteristics of physical pictures – it makes little difference to pictorial seeing. Venetian art of the fifteenth century began the trend
in Western art to be up-front with painterly technique: this simply does not decrease the propensity of the viewer to see objects in pictures. Conversely, one is able by all sorts of techniques to reduce the visibility of physical pictures to near-zero: these do not generally give one the illusion of real-life object-seeing.

Secondly, depicted objects give size and distance cues that conflict with one another. A picture can be very large or very small – and it is confusing how a building could throw a tiny image, or a face a gigantic one, and yet seem no particular distance away. The face shown on a postage stamp doesn’t seem as far away as a face would have to be in order to throw so small an image; in fact, it does not seem to be at any particular distance away from you, the viewer. The person on the stamp does not seem any further away than a person portrayed by a large oil-painting. And the puzzle runs deeper than this. For when one walks away from or closer to a picture that hangs on the wall, the scene it depicts does not seem that much closer or further away. This strange disconnection marks depicted objects off from real ones. The question, though, is this: does this disconnection come from pictorial seeing or vice versa?

Finally, when we move, the perspective that we have on a depicted object does not change. Bring to mind (or to your computer screen, via Google Images) Peter Paul Rubens’s painting of Samson asleep with his head on Delilah’s lap, his hair being cut by a servant whose work is illuminated by a candle held by an old woman. In the background are several people looking at the action through an open door. Now if this were a real scene, then as one moved to the right, the visual angles and occlusion relations would change. Samson’s head would partially hide Delilah’s bare breast; the old woman’s anxious face would be occluded by Delilah; more spectators would come into view through the door, and some that you now see would go out of sight. Nothing of this sort happens. Everybody and everything stays the same in relation to everybody and everything else. No previously hidden side is revealed as one moves in such a way as would shift one’s perspective. Your
curiosity about the back of Samson’s head, or Delilah’s other ear, remains unsatisfied.

As I have been suggesting, these differences between real-life seeing and pictorial seeing is that while they unquestionably figure in the diagnostics employed by the visual system, they do not immediately throw light on the Feeling of Presence. Consider for instance the duality of seeing: it implies, of course, the distinctness of pictorial objects and the objects that are pictures. This might lead one to reason along the following lines.

Rubens brush-strokes are there, related so to me. Delilah cannot be in the same place as the brush-strokes – she does not look as if she has brush-strokes on her face. So she must be somewhere else. But where? Not in my space: for my space is already fully occupied (by empty as well as filled spaces). This is the content of depicted-Delilah seeming to be in a disconnected space.

But this is clearly rather weak reasoning. When you look at a picture, you flip-flop between looking at the picture itself and looking at the things it depicts: it’s notoriously difficult, if not impossible, to attend to the surface features of the painting at the same time as you look at the things depicted. It is not quite clear why the depicted scene should not appear arrayed in front of you in one pole of the flip-flop. Why should it not be present when you are attending to it, as opposed to the brush-strokes, etc., and absent when the reverse is true? Of course, there is the unresponsiveness of your perspective on the scene as you move around, and maybe this is relevant too – but how does all of this fit into a coherent account of the Feeling of Presence?

Susanna Siegel (2006) has a deep and insightful discussion of a problem closely related to the one that I have just conducted. She notes that in the case of normal scene-vision:
visual experiences... inherit their truth-value from the truth-value of their contents.
If the content of an experience is true, then the experience itself is veridical; if the content of an experience is false, then the experience is falsidical (361-2).

To paraphrase:

If visual experience V is as of situation S, then if S is true/false, V is correspondingly veridical/falsidical.

I’ll call this condition the Inheritance of Truth-Valuation condition – notice that this condition is equivalent to what I have called “actuality-commitment”. Normal scene vision satisfies the condition. However, this is not true of all visual experience. Pictorial vision and visual imaging are not veridical or falsidical at all, regardless of the truth of their content. I am trying to explain this difference, and so is Siegel. ⁹

Now, Siegel is concerned with a different contrast case than mine. I have been contrasting normal scene-vision with seeing objects in pictures. Siegel, on the other hand, contrasts normal object-seeing with cases where the objects you “see” are merely subjective. Her two lead cases are, first, the “stars” you “see” when you hit your head or stand up too quickly, and second, the strange case of an invariant doll-view.

In the first of these cases, the “stars” in no way seem real. These “stars” do not exhibit the requisite independence from yourself: when you turn around and face the other way, they are still in front of you; when you move, they do not appear to stay where they were in objective space but do stay the same way relative to you (in other words: their allocentric coordinates do not stay the same, but their egocentric coordinates do); when you close your eyes, they do not disappear. (Siegel consistently places “sees” and “stars” in scare quotes when she is talking about this subjective phenomenon, and I will follow her in

⁹ Siegel (2006) and I arrived at these problems independently: the Feeling of Presence is discussed in Matthen (2005), chapter 13.
Suppose you were hit on the head just when you were enjoying a real scene in which there were similar holographically projected green dancing dots. The “stars” that result from the blow to your head do not seem to be added, as it were, to those that are present in the real scene. You experience not just one scene, but two disconnected sets of objects: one real and out there, the other subjective and “in the head”.

In the second case, Siegel imagines looking at a doll, and its suddenly losing its independence from you. Whereas previously it would appear further left in your visual field when you turn your head right, it now “moves with movements of your head as if you were wearing a helmet with an imperceptible arm extending from the front, keeping the doll in your field of view.” Regardless of how you move, you retain the same view of the doll. Even when you close your eyes, your view of the doll persists the same. Siegel quite plausibly contends that after a while the doll would not look as if it is an object that exists independently of yourself as viewer. “Overall,” she writes, “your experience of the doll comes to operate much like the experience of ‘seeing stars’ from being hit on the head” (370).

Siegel identifies two conditions that, according to her, form a part of the content of ordinary object-seeing. In modified form,¹⁰ they are:

(Subject-Independence) If I were to change my perspective on the object, then the object would not thereby seem to change its dimensions or move. (For example, my computer screen does not seem to move or get larger as I move my head toward it.)

¹⁰ Siegel’s formulations are fine for her case, but I am not sure how exactly they should be applied to the pictorial case, to which I will return in a moment. I don’t want to take time discussing this rather peripheral question – my formulations are a bit less specific, but they preserve the spirit of Siegel’s conditions, and they too are plausibly represented in the doll case.
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(Perspectival Connectedness) If I were to change my perspective on the object, my view of the object and of its relations to other objects that I see would change as a result of this change.

Siegel contends that these conditions are part of how we see objects in real-life vision: Subject-Independence and Perspectival Connectedness are among the “expectations . . . found at the level of visual experience,” she says (358-9). In the experiences of the doll and of “seeing stars”, she says, these expectations are not built into content. And this, according to her, is the difference between these two kinds of seeing – real-life or objective seeing, and the visual experience of objects that look to be unreal or subjective. The “stars” look subjective because these conditions fail in “seeing stars” experience. Presumably, then, the Inheritance of Truth-Valuation fails for these cases because the failure of the above conditions marks the visual experiences as not purporting to be about the real world.

I agree with the main thrust of Siegel’s analysis. In the cases just discussed, the “stars” and the doll are indeed seen as not belonging to the real external world. They appear, rather, to be subjective. But I do not agree that this is a difference of content. Rather, it is a difference of cognitive feeling. One argument to support this contention is the same as the one I gave before for the case of episodic memory. The content of these visual experiences is imagistic – take this to mean simply that it is just like an ordinary visual experience, except insofar as it does not purport to present a real situation. It is not clear how a visual image of what is real could differ from one of a visually similar scene that is not real. Therefore the difference is not a difference of content. Nevertheless, there is a semantic difference: the visual images that one has when one figuratively “sees stars” after being knocked on the head do not present themselves as truth-assessible; the visual images that one has when one actually sees stars do so present themselves. Since this semantic difference cannot be traced to a difference of content, contrary to what Siegel contends, they must be traced to a difference of attitudinal force. The Feeling of Presence is supposed to be a difference of force.
The veridicality of “seeing stars” is not inherited from the truth-value of the content of this experience. That is: the experience of seeing stars is not false because there happen not to be any such objects in your vicinity. Why? Because the experience of “seeing stars” does not purport to tell you that there are such objects near about you. It does not have the feel of an experience that is informative about the real world. I have just argued that this cannot be a matter of what is contained in the content. Therefore, it has to be a matter of how the content is asserted, a matter of content-directed attitude, not content. For suppose that Subject-Independence and Perspectival Connectedness were part of the content of ordinary seeing – as Siegel contends. Suppose that contrary to argument that I have given, these conditions could somehow be visually presented – imagistically presented, that is. What would then prevent us from merely imaging Subject-Independence and Perspectival Connectedness? Can’t every visual quality be imagined, anticipated, and episodically remembered?

Here is a further important point. Siegel’s two conditions come apart in the case of seeing objects in pictures. Perspectival Connectedness fails in this kind of seeing, since walking around a picture does not affect occlusion relations or which side of objects you see. However, Subject-Independence continues in place: the dimensions and position of objects do not appear to change when the viewer’s position changes. Yet, depicted objects do not appear real: seeing objects in pictures is not like seeing them in real life.\textsuperscript{11} (The same holds of the distant objects: in the limit case – think of heavenly objects, for example – Perspectival Connectedness fails, and in the case of far-away terrestrial objects are concerned, it fails with respect to relatively small movements such as we can complete in a few seconds. However, Subject-Independence holds with respect to distant objects.)

\textsuperscript{11} Listening to music through earphones provides another example where perspectival connectedness fails but some sort of subject-independence is preserved, however the latter is exactly to be formulated. For when one listens through earphones, the sound appears to be located in and around one’s skull, but when one moves one’s head, it stays pasted to one’s skull. Yet the music does seem subject-independent (however that is to be understood).
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In Siegel’s case of “seeing stars” after being hit on the head, the stars one “sees” are green and dancing just in case one’s experience of them is as of green and dancing stars. There is nothing independent to measure the stars against, and vision does not represent them as having this independence. Siegel’s point about the doll is that as it fails Perspectival Connectedness, vision gradually ceases to represent it too as having this kind of independence from the subject’s own experience. The case of pictorial seeing is different: here, the failure of Perspectival Connectedness does not lead to vision failing to represent depicted objects as independent of the subject. Vision represents depicted objects as not really present; nonetheless, it represents them as independent of the subject.

V. The Feeling of Presence and the Two Visual Systems

I want now to offer my own account of the Feeling of Presence.

Recently, evidence has accumulated for the existence of two kinds of visual system. Originally, researchers concentrated on the difference between thalamic and tectal vision – visual data-streams that run to the cortex via the lateral geniculate nucleus, and those that run through the superior colliculus to the midbrain (Schneider 1969). More recently, the discussion has been about two cortical data-streams (Goodale and Milner 2004), one that runs from the primary visual cortex to the infero-temporal cortex (the so-called “ventral stream”) and one that runs from the primary visual cortex to the posterior parietal cortex (the “dorsal stream”).

I am not concerned with the precise anatomical details of these data-streams here. My concern is rather with a broad functional difference and the (double) dissociability of these functions. The basic point is that one kind of visual data-stream provides the perceiver with imagistic characterizations of objects in her visual field. For instance:

• that objects are of such-and-such colour and shape,
that they are moving slowly or quickly in this or that direction,

• in the case of inanimate objects, that they are constructed of long/short/roundish/square-ish (etc.) parts in such and such and such a configuration,

• in the case of humans, information about their faces that is useful for subsequent identification,

and so on. Such characterizations of objects are storable and recallable; and they influence future behaviour via memory functions such as conditioning, habituation, sensitization, and priming. Typically, they are at least potentially conscious – visual awareness is precisely consciousness of objects under the above characterization. I shall group such visual functions together under the term *descriptive vision*.

A second kind of data-stream provides the perceiver with information for bodily guidance at a level of fine motor control of which the perceiver is not usually (or ever) aware. For example:

• that objects are oriented thus-and-so for the purposes of grip alignment when reaching to pick them up or manipulate them,

• that some sudden change is occurring in the visual periphery, so that vision and attention can be directed towards it by means of an attentional saccade,

• that the light is bright or dark, so that the aperture of the pupil can be adjusted,

and so on. Such characterizations of objects are not stored in order to influence future behaviour and they are generally not recallable. Nor do the differences among objects thus characterized enter into consciousness: the actions thus guided are not undertaken because of visual states of which we are consciously aware. I shall group such visual functions together under the term *motion-guiding vision*.
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It is important to reiterate and emphasize before we continue that I do not intend the terms “descriptive vision” and “motion-guiding vision” to be co-extensive with the terms “ventral stream vision” and “dorsal stream vision”. As I said earlier, the visual systems that Schneider differentiated were thalamic and tectal – a quite different distinction anatomically. What is of importance to the philosopher is not the anatomical characterization of these functions, but rather the question of whether there can be motion-guiding vision in the absence of descriptive vision. Given certain kinds of blindsight, this question can be answered in the affirmative. But the question of whether there is dorsal stream vision in the absence of ventral stream vision can and is disputed (for instance, by Yves Rosetti in this volume).\textsuperscript{12}

It is a crucial fact about these visual functions that they are doubly dissociable. Famously, there are patients who, because of lesions in the parietal cortex lack the ability to manipulate objects effectively, even though they are perform well when they attempt to describe these objects. Similarly, there are patients who, because of lesions in the temporal lobes claim not to be able to see very much, and perform poorly when asked to describe objects, but are quite good – sometimes extraordinarily good as in the case of the famous DF (a patient studied by Goodale and Milner) – at manipulating objects, negotiating uneven terrain, and so on. This is a double dissociation between one kind of motion-guiding vision and one kind of descriptive vision – with regard to each function, some patients are more or less impaired with respect to it, while the other is spare – and though it is somewhat controversial exactly where the functional and anatomical divisions between these visual systems lie, it is by now extremely well-established that some such division exists. In what follows, this is all that I need.

\textsuperscript{12} Athanasios Raftopoulos (forthcoming) is critical of some of my views (Matthen 2005, chapter 13) precisely because he thinks I overplay the distinctness of ventral and dorsal stream processing – but I was explicit that I have no attachment to this distinction at all, except insofar as it inspired the distinction between descriptive and motion-guiding vision.
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Thanks to motion-guiding vision, we have the feeling that we are able to manipulate objects in our immediate vicinity, and reach out to them. This is centrally relevant to our ability to communicate by pointing to objects. When I point at an object, I am utilizing my visually-guided ability to reach for it, get to it, and come into contact with it. You understand my gesture in part because of your own ability to interact with the object in these ways. Thus, motion-guiding vision is involved in our ability to locate objects relative to ourselves.

Motion-guiding vision locates objects in egocentric terms: it gives us information not so much about objective spatial location, but about location relative to our own bodies and our own motions. When we walk towards or around an object, the object does not seem to change its spatial location – this is thanks to the contribution of descriptive vision. From the point of view of bodily motion, however, the object does change its coordinates: it is differently located with respect to which of the perceiver’s hands is best for touching it, how far the perceiver will have to reach or walk in order to do so, etc.

Now, motion-guiding vision – i.e., the sum of the visual data-streams that guide object-manipulation – is known to engage only those objects with which one is able to make contact by reaching, or with a tool such as a stick. Motion-guiding vision does not engage far-away objects. What it does is to assign perceiver-relative coordinates to objects that are close by – it calibrates objects in what we may call near-space; the outer boundaries of near-space are no more than say ten feet away from the perceiver. Once near-space has been calibrated, the more objective spatial coordinates provided by descriptive vision, can be converted into egocentric coordinates. Near-by objects are connected to far away objects by visible paths: the fineness of visible detail and angular dimensions of seen objects varies down these paths in predictable ways; these and other clues help us locate objects in far-space relative to ourselves.\textsuperscript{13} Motion-guiding vision is thus the anchor for interacting with

\textsuperscript{13} At the conference, there were questions about whether the heavenly bodies (i.e., stars) possessed the Feeling of Presence. I take it that they do, because
objects in the space that surrounds us, whether near or far – directly in the case of near-by objects, and indirectly with far-away objects.

Depicted objects do not engage motion-guiding vision either directly or indirectly. Normal object-seeing involves a simultaneous engagement of both kinds of vision, and feed-back from each to the other. Thus normal seeing involves the assignment of egocentric coordinates to seen objects as well as the assignment of allocentric (or objective) coordinates to them. However, pictorial seeing involves only descriptive vision. Depicted objects cannot be located relative to the perceiver’s near-space. Thus, they stand in spatial relations to one another, but not in no determinate spatial relations relative to objects that are in near-space. But, I have argued, the visual guidance of our interactions with objects depends crucially on the engagement between motion-guiding vision and objects in near-space. Thus, the visual system affords us no guidance concerning interaction with depicted objects.\(^{14}\)

To summarize:

*Depicted objects cannot visually be located relative to the perceiver.*

Though we are able to perceive spatial relations within pictures, there is no continuity between near-space and depicted space. There is an abrupt cut-off at the surface of the picture. Consequently, we cannot see where these objects are relative to ourselves. We can, of course, point at an object in a picture – “That’s Delilah, not the old woman with a candle”. But this is different from pointing at an object in real-life.

\(^{14}\) I do not mean to deny the possibility of learned visual interactions. For instance, surgeons can snip objects revealed to them by images on a television screen by small cameras. And Andy Clark has pointed out to me (at the conference) that there are fake interactions in three-dimensional video simulations.
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When we point at a depicted object, we do so without indicating where it is. (Perhaps it is a form of deferred ostension – we point at the coloured patches that depict the object, and secure reference to the object through their intervention.)

This leads me to a thesis regarding normal object-seeing.

The Feeling of Presence is a matter of objects being visually locatable relative to the perceiver. Perspectival Connectedness is not the essential condition, since it fails also with respect to distant objects, which feel as if they are present.

VI. Visual Experience and Demonstratives

Visual experience have a demonstrative element, I now want to argue, and this is constitutive of the Feeling of Presence. More explicitly: The ability to interact with objects by locating them in egocentric space is indicative of a demonstrative element in visual content, and the Feeling of Presence is a consequence of this demonstrative element.

First, let us define demonstratives. To do so, we need the prior notion of indexicals. You say ‘I am tired’; I say ‘I am tired’. Though the same words, with the same meaning, were uttered by you and by me, we spoke about different persons – what I said was about me; what you said was about you. How can this be?

The classic answer is due to David Kaplan (1988). ‘I’ is an indexical: one component of its meaning is what Kaplan calls character. The reference of an indexical is determined by context. Context consists, minimally, of a speaker, a place, and a time. The reference of ‘I’ is the speaker; that of ‘here’ is the place; that of ‘now’ is the time – each of these relative to the context of utterance. In the example considered in the preceding paragraph, the context of my utterance is different from that of yours. That is why the referent of ‘I’ is different.
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A demonstrative is a term the reference of which is determined by context (speaker, time, place), as well as a specific kind of relationship that obtains between the elements of the context and other things. 'That' is an example of such a term. Its referent is determined not just by the speaker, place, and time, but also by some kind of gesture, such as pointing, performed by the speaker. You understand my saying 'that' by understanding first that I am the speaker relative to whom the term should be evaluated, and by grasping the relatum of my gesture towards some object.

One important property of a demonstrative is that the pointing gesture associated with it operates independently of the speaker’s beliefs. Suppose I point and say ‘That dog’. Imagine that I believe that there is one dog in front of me and one behind me and that I am pointing to the one in front. By the normal rules of pointing, I would have been pointing at the dog in front of me, had there been one, and I intend to point to the dog I think is there. As things really are, however, the “dog” in front of me is a reflection in a mirror of the dog behind me. And the rules of pointing dictate that when I say ‘that dog’ and point at a reflection, then I refer to the dog itself (not the reflection). Thus, by the rules, I am pointing at the dog behind me, though I think (falsely) that I am pointing to a dog in front of me. My contention is that in such a case my beliefs do not determine what I refer to; rather, the rules do. The demonstrative does not refer to a particular dog because of what I believe about that dog. Rather, it refers to that dog, because the pointing gesture is sensitive to where the dog really is (regardless of my beliefs) and to changes in where it is – if the dog were to move, the pointing gesture would have to be modified appropriately.

A demonstrative, then, is a term $D$ such that

(i) the reference of $D$ is determined by context, an associated description, and a certain relationship $R$ between the speaker (in that context) and some object, and such that
(ii) the speaker’s own beliefs about this relationship \( R \) do not play any role in determining the reference of \( D \), and

(iii) The relationship \( R \) is sensitive to the location of the object demonstrated.

The demonstrative element in visual experience is to be understood by analogy with that in language. You are sitting in a darkened room looking at an illuminated blue sphere \( S_1 \); I am sitting in a darkened room thousands of miles away looking at an exactly similar sphere \( S_2 \). Though we have qualitatively similar experiences, your experience is about \( S_1 \), while mine is about \( S_2 \). What makes this so? Clearly not the imagistic content of our visual experiences, for they are the same.

One kind of answer to this question sheds no light on the significance of the visual state to the perceiver. H. P. Grice (1961) argued that \( S_1 \) is the object of your visual experience (not \( S_2 \)), because \( S_1 \) (not \( S_2 \)) caused it, and the same is true \textit{mutatis mutandis} of \( S_2 \) and my experience. True, but this tells us nothing about the significance of each visual state for the perceiver – given that our visual experiences are qualitatively similar, the question is: how can your experience of afford you a capacity with regard to \( S_1 \) that my experience does not give me, and how does mine give me a corresponding capacity with regard to \( S_2 \) that is not available to you? Grice’s distinction does not answer this question; indeed, no merely relational fact about a perceiver can explain how he comes to have a substantive capacity. The kind of answer that I am interested in adumbrating here consists of identifying some intrinsic fact about a visual experience that makes it experience informative about one object rather than another. Thus, I will take it that a visual experience is about \( S_1 \) rather than about \( S_2 \) only if this experience enhances the perceiver’s capacities with respect to \( S_1 \) but not with respect to \( S_2 \).

Now, one difference between our visual states is that the motion-guiding component of your visual state enables you to interact with \( S_1 \) in a specific way,
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while mine enables me to interact with $S_2$. Changes in $S_1$ result in your body being differently poised with respect to it were you to try to grasp or move toward it; changes in $S_2$ do not have this result. Let us call this the visual-interaction-relative-to-$S_1$ relation, or $I(S_1)$ for short. Note that this relation is not merely a matter of the perceiver being affected by $S_1$; it is that the perceiver is capable, in virtue of $I(S_1)$, to act on $S_1$, and to adjust his or her own orientation to respond to changes in $S_1$’s position.

My claim is that $I(S_1)$ constitutes a demonstrative relationship between the visual perceiver and a certain object in his or her visual field.

It picks out a visual object that with which this perceiver is able to interact in virtue of his or her visual state.

There is also evidence that motion-guiding vision calculates spatial coordinates for pictured objects differently from descriptive vision. For it appears that motion-guiding vision is immune to size-contrast illusions such as the Ebbinghaus illusion (Haffenden and Goodale, 2000). When a perceiver is presented with identical circular objects, one surrounded by a halo of very small circles, and the other by very large circles, the former looks much larger. Yet, when the perceiver reaches for these same targets, he does so without error. Yet, size contrast illusions are part of what serve as cues of distance in pictures. So it seems that motion-guiding vision is insensitive to the size and distance of objects in pictures.

Moreover, the visual-interaction relation operates independently of descriptive vision. For this reason, the perceiver’s ability to interact with a visual object is independent of any visual description that he can provide. Suppose that you misperceive the colour and position of an object in your visual field. There is evidence that motion-guiding vision will not necessarily be deceived in tandem with these errors of
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perception. Thus, taking both components of the visual system into account, the visual experience consists first in engaging with an object by virtue of a non-descriptive relation, and second in ascribing certain visual features to the object. Seen in this way, the visual state carries a message of the form “That is $F$” for some visual feature $F$.

The perceiver stands in no such relationship to respect to depicted objects. I have already argued that the perceiver is unable to locate these objects relative to his own limbs. The Feeling of Presence arises, then, out of an informationally rich demonstrative relationship between visual experience and visual object.

One last point: The Feeling of Presence has now been tied to the ability to locate an object in space in such a way as to be able to interact with it. If this is correct, then a visual experience, for example of a blue sphere, includes as components, first a demonstrative element that identifies the object, and secondly a description of the object so identified as possessing certain visual features – it is presented as a blue sphere. Normal visual experience is thus quite determinate with respect to truth conditions: a definite object has to have determinate properties in order for the experience to be veridical – the object and properties identified by the content of the experience. With respect to pictures, by contrast, the content of the experience concerns an indeterminate object in an indeterminate location. The state of affairs in the real world is irrelevant to pictorial experience, which therefore does not inherit its truth value from the truth value of the content.

Summary Visual experiences have imagistic content. Real existence cannot be asserted by imagistic content. Normal scene-vision, however, does assert real existence. Hence, there is a semantically significant component of visual experience that is distinct from its imagistic content. This is the Feeling of Presence. My conjecture is that the Feeling of Presence arises out of a visually guided but non-descriptive (i.e. non-conscious, unstored, unrecallable) capacity for bodily interaction with external objects.
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