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Is the Appearance of Shape Protean?

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ABSTRACT: This commentary focuses on shape constancy in vision and its relation to sensorimotor knowledge. I contrast "Protean" and "Constancian" views about how to describe perspectival changes in the appearance of an object's shape. For the Protean, these amount to changes in apparent shape; for Constance, things are not merely judged, but literally appear constant in shape. I give reasons in favor of the latter view, and argue that Noë's attempt to combine aspects of both views in a "dual aspect" account does not manage to avoid an unacceptable attribution of contradictory content to visual appearance. I argue also that my position here actually fits better with Noë's critique of a "snapshot" conception of visual appearance than his own interpretation of visual constancy, and better supports his claim that experiential content is constituted by the exercise of sensorimotor understanding.

1. Introduction

We know how to perceive things by moving in the right way: we know how, by touching something, to feel its shape and texture; we know how, by looking at something, to see where it is, how it is shaped and situated. It is tempting to suppose that such movement—such sensorimotor activity—is merely the means by which we happen to come by the content of our experience. Much as we may generate different images in a camera by moving it around and pointing it this way and that, so, by directing the gaze we construct something like a "movie in our heads." But, on Alva Noë's view, it would be a deep mistake to think perception works this way. The exercise of our perceptual know-how, our sensorimotor understanding, is not merely contingently and instrumentally related to the content of experience. The exercise of such understanding in a way *constitutes* our perception of objects (pp.2-3).

In asking us to give up more traditional notions about experience and its relation to motor abilities in favor of his "sensorimotor" or "enactive" conception, Noë wants to transform our understanding of the fundamentals. Whether we agree that some such transformation would be salutary (I tend to think it would be) we should welcome his efforts to invigorate the philosophy of perception with bold and provocative ideas. Unfortunately, I will be able to concentrate on only a narrow portion of these ideas—though I hope in such a way as to illuminate the broader issues. I will focus on the visual appearance of constancy in shape. I will suggest some criticisms of Noë's "dual aspect" view of the experiential content involved, which will lead to some questions about how his interpretation of perceptual constancy relates to his book's dominant theme: the notion that perception should be seen as the exercise—the "enactment"—of a kind of practical knowledge.

2. Perceptual Constancy: Starting Points

Often things are somehow *perceived to be constant* or unchanging in, e.g., color, shape, size, or position, even while *changing in their sensory appearance* with respect to these features. While this is a basic and obvious fact about perception, it can be curiously difficult to attain consensus on a clearer and more precise description of it. How we go on to describe it can, nevertheless, significantly affect how we think about perception generally, and thus affect how we view a number of central philosophical issues connected with perception. To get clear about some of the ways descriptions can diverge, let's try first to articulate a conception of shape constancy that is neutral with regard to these differences.

Look at a sheet of paper. Suppose someone were to ask you, "Why do you think the sheet of paper is actually staying the same shape while it appears to you differently, as your gaze shifts now here, now there, and as you move closer, now farther from it—to the left, or to the right?" I assume that it would be in some sense correct for you to respond, "This is at least partly because of how it looks to me. It looks like something I *would assert* (and thus that I do *judge*) to be constant in shape, not like something I think is changing shape." Somehow or other, partly because it looks to you as it does, you judge it to be unchanging in shape through the flux in appearance.

Such constancy in one's *judgment* of shape through change in *appearance* of shape characterizes normal visual perception nearly continually. As changes in visual attention, focus, and perspective occur, the way a thing's shape looks to you is in flux, though you do not judge or believe the thing's shape is in flux—you do not judge it to be altering in shape. Or more precisely—you judge it *not to be altering* in shape, and your reason for judging it to be unchanged in shape is partly how it looks.

So in some sense, it is often true that:

> **CF** The way something's shape *looks* to you is *changing*, even though you *judge* it to be *unchanging* or *constant* in shape, at least partly *from how it looks*.

I call this "CF" for "*judged* **Constancy** of shape amid **Flux** in shape *appearance*"—or more briefly: "**Constancy amid Flux**."

Let us interpret 'look' and 'judge' in such a way that makes CF true. And let us also acknowledge that, in a sense consistent with that interpretation, the *judgment* of the

thing's shape in a given instance can remain the same, even while the thing ceases to *look* any way to you at all (as when you shut your eyes). Thus we can recognize a distinction between visual appearance and visual judgment. We distinguish what we mean by speaking of:

> How something's shape *looks* to us, and
>
> How we *judge* it to be shaped, partly on the basis of how it looks—i.e., on the basis of its *visual appearance*.

I do not mean to suggest that these comments entirely clear up how we should understand the difference between visual appearance and appearance-based judgments, and what it means for judgments to be "based on" appearances. I simply intend them to fix the interpretation of these terms sufficiently to set up the problems of perceptual constancy with which I want to frame my discussion of Noë, in a way that keeps disputable assumptions to a minimum.

3. As the Plate Turns: Proteus versus Constance

Consider a case where something is *judged constant in shape* through a *flux in shape appearance*. That is, consider a case of CF—**C**onstancy-amid-**F**lux. And hold fast to the interpretation of 'looks' consistent with the remarks of the previous section. Now: in such a situation, is the following also true?

> **LC** It *looks* to you constant in shape.

We may contrast two ways of characterizing perceptual constancy partly by how they answer this question. For convenience we may introduce the contrast by reference to the example (to which Noë often recurs) of the round or circular plate, viewed at an angle.

When viewed obliquely, how does it look to you with respect to shape? On one conception, you should say it—or *something*, at any rate (perhaps distinct from the plate)—*looks elliptical* to you. Now, on this view, it seems we are committed to saying that, as the plate turns (or as you turn about it), something gradually looks to you *less and less* elliptical, until finally, as it is presented to you face-on, it looks round or circular in shape. Thus when CF is true, and *the way something's shape looks to you* is changing, it's also true that something looks to you *differently shaped*. Admittedly, you do not then think (or judge or believe) the plate *has* these different shapes. You do not think it is changing shape during this time. But that is entirely a matter of what you *believe or judge*, and not about how it visually *appears* (how it looks) to you. What appears to you does not *look* constant or unchanging in shape—you only believe or judge something to be so. Thus—on this view—LC is not true. Let's call the proponent of this view "**Proteus**."

Now comes **Constance**. *She* says: "True, the plate in some way and in some sense *appears differently* as its surface is positioned at various angles relative to the viewer. To admit that CF is true is to admit that much. However, the plate does not appear to *change* shape; it looks *constant* in shape—the *same* shape during the viewing as a whole. And *nothing* (not even a so-called "sense-datum" distinct from the plate) appears to change shape during this time. What appears to you looks constant in shape throughout the viewing. That is to say, *contra* Proteus: LC is also true." So Constance rejects the Protean interpretation of CF. She rejects the idea that when CF is true, and the way something's

shape looks to you is changing, it's also true that something appears to you *differently shaped*.

So, here we have two possible takes on the phenomenon of shape constancy in vision. Both accept CF—constancy amid flux. But, according to Proteus, we should interpret CF so that the *change in the appearance of shape* is tantamount to a *change in apparent shape*. And Proteus rejects LC—for him perceptual constancy belongs strictly to *judgment*, not *appearance*. According to Constance, on the other hand, we should reject the Protean interpretation of CF, and affirm the truth of LC. Even though the way the shape appears to us is in flux, *shape constancy is also a matter of appearance*, and not only of judgment.

When faced with this choice between Proteus and Constance, we may think that it is pretty clear, just from first-person reflection, which more accurately describes our experience. But there is a certain lack of harmony in these first-person assessments. Some people (and Noë is one of them) think it is fairly clear (however much some philosophers want to squirm out of this) that we should say the obliquely viewed plate looks elliptical from the viewer's perspective. (p. 78) And many philosophers in the empiricist tradition have found such claims more or less obvious. Others (and I admit I am one of them) are doubtful about this "elliptical-looking plate" talk. In my case at least, this is partly because it seems to lead to the Protean conception of CF, and is at odds with other things it seems right to say on the basis of first-person reflection. So it seems that first-person reflection (or introspection, if you prefer) is offering rather discordant judgments on the character of appearances. Assuming that this isn't just because some of us have Protean perceptual experience and others have Constancian visual systems, we might wonder how (or whether) fruitful dialogue on the matter is possible.

I'm not, by the way, claiming here that Noë simply embraces the Protean view against Constance. His view is more complex than that. But before we get into the details of Noë's view, it will be useful for my purposes to be clearer about the problems with a certain way of trying to resolve the dispute I have just outlined. One suggestion that presents itself: maybe this sort of disagreement in introspective judgments about experience is due to the fact that both sides have a part of the truth, but fail to see how to join these together in a unified account. Proteus' view is partial because he is trying only to do justice to the undeniably perspectival character of visual experience, without adequately taking into account appearances of constancy. Constance, on the other hand, takes *this* into account—but to the neglect of *perspective*. So perhaps: Proteus' view is "one-sided," while Constance "lacks perspective." So here we might wonder: couldn't Proteus and Constance settle on a kind of *compromise* that remedies the defects in each with the insight of the other? Why not combine the Protean interpretation of CF ("Constancy-amid-Flux") with Constance's embrace of LC ("Looks-Constant")? Why not let Proteus and Constance both be partly right?

This sort of direct compromise seems to me untenable. In order to set up my discussion of Noë's view, I need to explain why. The problem, as I see it, is this. If you conjoin the Protean view of the flux in appearance with the constancy in appearance of LC, you will be committed to the view that visual appearances are, in a sense, pervasively self-contradictory. For you will be saying that in ordinary vision, things look at once both

changing in shape and *unchanging in shape*. You will run into what I'll call the Problem of Contradictory Visual Appearances.

But why is this a problem? Why do I think it would it be unacceptable to hold that visual appearances are indeed pervasively self-contradictory in just this way? For starters, I have to say that if you simply claim that ordinarily as we move about our environment, the same things appear to us both changing in shape and constant in shape at the same time, and you just leave the matter there, then I do not understand how what you are saying could be true.

Sometimes, admittedly, people want to characterize certain illusory experiences of movement in contradictory terms. When you stare at certain moving patterns and then abruptly redirect and fix visual attention elsewhere, you can have an odd experience you may be tempted to report by saying that the area or surface you are looking at appears *both to move and not to move* (as in the so-called "waterfall illusion"). But it seems in these kinds of cases we can *restate* what is going on in a way that renders the situation more intelligible, and removes the contradiction. In such cases: what appears to move (that area or surface) also appears vaguely bounded by and continuous with some area or surface that appears *not* to move, and this appears stable and continuous with the apparently moving area in such a way that one can tell from the *total* appearance that the appearance of motion is incorrect. And: in such cases the appearance of motion soon diminishes in favor of an appearance of stability, in a way that allows one readily to recognize the fading appearance of motion as illusory.

But no such clarifying restatement seems available that could render intelligible the description that results from an attempt at direct compromise between Proteus and Constance. There we would simply be stuck with saying that the same object appears at once both to change and not to change shape; its boundaries appear both to alter and to stay the same, at the same time, period. And that, as it stands, just does not provide us with a way to render something's manner of appearance intelligible. Moreover, that way of describing them would leave us helpless to account for how we distinguish perceptual errors from correct appearances with respect to shape. If we accept the compromise as stated, perspectivally changing appearances of shape are simultaneously self-contradictory: things typically appear to be both morphing and stable in shape as we move about things or they move about us. But then we cannot see how the appearances of shape we enjoy even *could* be correct. For they are in constant internal conflict. They could then be no more "partly correct" than could continual self-contradictory statements. (Someone who says "x is now changing shape without changing shape" is not *partly* correct when x is changing shape.) Thus attempting a direct compromise between Proteus and Constance would leave us with a way of describing ordinary appearances of shape that is of doubtful intelligibility, and that, in any case, makes them too incoherent to be considered as even partly accurate or correct. So I conclude, the direct compromise is not a viable option.

4. A Problem for Noë's "Dual Aspect" View of Experiential Content

Now we are faced with this challenge for the description of perceptual constancy. How do we settle the dispute between Proteus and Constance? And how do we do this, without running afoul of the Problem of Contradictory Visual Appearances?

Noë appears to want to effect some sort of compromise here. For it is part of his thesis that the content of visual experience has "two aspects," and is (as he also puts it) "two-dimensional." As he says: "Perceptual content has a dual aspect…[Y]our experience presents you with the circularity of the plate, but also with the elliptical shape it presents from here." (p. 163) Or, as he also says, "there is a sense in which the circular plate looks elliptical (as well as round)." (p. 166)

Judging just by these quotes, one might think he embraces the attempt at direct compromise I have rejected. Now Noë is aware that his view seems to attribute a conflict to the content of visual appearance (indeed he thinks an apparent conflict *ought* to be acknowledged): "Part of what makes the study of perception so difficult is the necessity of acknowledging…the prima facie conflict in perceptual content." (p. 167) But this "prima facie" talk suggests that he regards the conflict as merely apparent, not genuine, so that it disappears on a fuller understanding. It clearly wouldn't be right then, to say that he simply endorses the direct compromise I say defies comprehension. But we need to look more closely to see whether he shows how the conflict is merely prima facie, and how he can avoid the Problem of Contradictory Appearances.

It is undoubtedly crucial here to see that Noë emphasizes the importance of distinguishing between what *size or shape* something looks and what *apparent size or shape* it looks. The latter he also calls its "*perspectival size or shape*" ("P-size," "P-shape"). Thus it seems we get this picture: something can look *elliptical* in *apparent* or *perspectival* shape, while also looking *round* in (plain old) shape. As we might put it: as the plate turns, what appears is a change in *apparent* shape, together with a constancy in (plain old) shape. As Noë says, "the perspectival shape of the plate changes as we move." But, nonetheless: "we experience that the plate is round." (p. 172)

Does this help Noë avoid the Problem of Contradictory Appearances? It may seem so. For as long as it does not follow from his view that something at the same time looks both changing and unchanging in *shape*, or both changing and unchanging in *apparent or perspectival shape*, we seem to avoid the consequence that visual appearances are pervasively self-contradictory. There is no *real* conflict in appearances, when something appears both changing in *P-shape* and constant in *plain old shape*. For something can stay the same shape, while altering in P-shape.

However, I'm not sure this really dispels the difficulty. The P-shape (say, elliptical) is the apparent shape. But we need to ask: just what is it for something to be *elliptical in apparent shape*, if not just: to *appear elliptical*? If that were all it meant, then to say that something looks elliptical in apparent shape would presumably mean something like: 'it looks elliptical-looking,' or 'it looks *apparently* elliptical,' or 'the shape it appears looks elliptical.' The phrase 'it looks elliptical in apparent shape' would be *redundant*. It would mean nothing more than: 'it looks elliptical.' The addition of 'in apparent shape' does no work. After all, what shape could something *appear* but its *apparent* shape? The problem is: if this is right—if "looks elliptical in apparent shape" means no more than "looks elliptical"—we have not distinguished appearances of apparent shape from appearances of plain old shape. We're back to saying simply that the plate looks both round and not-round, both changing and unchanging. And the prima facie conflict has not been dispelled.

Perhaps we can make the crucial distinction more successfully if we focus on the fact that the *apparent* shape is the *perspectival* shape. For the perspectival shape, naturally enough, will be the shape something looks *from a given perspective*—the shape it looks *from here*, say. Again, as Noë puts it: "we experience the plate is round and that it looks elliptical *from here*." (p. 172, my italics) And: "The plate looks to be circular…*and* it looks elliptical from here." (p. 164) We should thus describe matters this way: "It looks round *and* at the same time, it looks elliptical *from here.*" But then we may argue: these aren't genuinely conflicting or contradictory appearances. They would be, only if the same thing looked both *elliptical from here* and *round from here*. But no—only the first (elliptical) appearance is a "perspectival" or "from here" appearance.

However, it's not clear how this would help. For first: in whatever sense we want to recognize that we experience the plate's roundness as it turns—in whatever sense we want to recognize that it looks constantly round in shape to us—this will also be a sense in which we should want to say it looks that way *from here*. If I experience the plate as constant in shape while it turns, surely it is still "from here" that I thus experience it. What could it mean to say that, though it looks constant in shape to me as it turns, it does not look to me constant in shape *from here*?

Maybe this criticism goes wrong in assuming that by saying 'It looks elliptical from here' Noë means just: 'From here, it looks elliptical.' Perhaps that's a mistake—the idea is rather this: *elliptical-from-here* is the apparent property of the plate. By contrast, *round-from-here* is no property the plate appears to have, in looking constantly round, as it turns. (Though of course, it is then true to say, '*From here*, it looks (constantly) round.') So the conflict is dissolved. There is no contradictory content, when something appears both round and elliptical-from-here. There would be, only if this entailed that from here it appears both round and elliptical. But that doesn't follow. We must firmly distinguish 'From here, it looks S' and 'It looks S-from-here.'

But this leads to a new question. Just what is the difference between the property "elliptical-from-here" and the property "elliptical"? Again, it won't help to say that only the first is an "apparent shape." Maybe we can answer by appeal to this idea, which Noë mentions, that the P-shape is the shape of a patch whose interposition would exactly *hide* the apparent object. As he puts it, "The P-shape is the shape of the patch needed to occlude the object on a plane perpendicular to the line of sight." (p.83) So: 'It looks elliptical-from-here to me' (i.e., 'It looks P-elliptical to me') means something like: 'It looks the shape of the patch needed to occlude this object on a plane perpendicular to my current line of sight.'

But I don't see how this would remove the problem. *That* shape—the shape of the patch needed to occlude this object…etc.—is none other than: *elliptical*. And so evidently we're back to saying the plate looks elliptical—and yet constantly round. And we still have the worrisome result that this will make the plate appear both changing and unchanging in shape.

There is, it seems to me, a different way to make use of this "patch" idea to interpret talk of P-shape appearances. The proposal would be this: to say 'it looks elliptical-from-here' means: *it visually appears a shape that would be exactly hidden by an elliptical patch placed in a plane perpendicular to my current line of sight.* Surely in

this sense at least, the plate does look "elliptical from here." And this is, fittingly, a matter of perspective: when the plate turns a bit, when the perspective changes, the plate doesn't appear a shape that would be hidden by a patch of precisely the same shape as before. That seems to me unobjectionable. But notice that now we're interpreting 'It looks elliptical from here' in a manner consistent with saying that, as the plate turns, nothing *looks differently shaped*, or *appears to change shape*. For one and the same (constant, unchanging) shape that the plate appears, could be both:

At time t_1, a shape that would be occluded by a patch with shape S_1—and—

At time t_2, a shape that would be occluded by a patch with (a different) shape S_2.

That is to say: the shape the plate appears is constant, and yet two different descriptions are true of it at two different times. First *the shape the plate appears* is a shape that would be hidden by an S_1 patch, then (after the viewing angle changes) it is a shape that would be hidden by an S_2 patch. But there is no apparent change in shape; nothing appears to change shape.

Thus, to interpret P-shape in this manner is to interpret appearance of P-shapes in a way quite consistent with Constance's anti-Protean view—the view that the way the plate's shape looks to me alters, but nothing then appears to alter shape. If we interpret the *change in the appearance of shape* in this way, we are not interpreting it in a Protean way, i.e., as an *apparent change in shape*.

But now we might ask: can't Noë cheerfully accept the just proposed account of what he means by saying things present P-shapes? He does say that the "perspectival shape changes as we move." But perhaps that too can be interpreted in line with my most recent proposal, and so in a way that is consistent with denying that, as we move, things appear differently shaped. Maybe there is no element of Proteanism in Noë's account after all.

Well, maybe that is right. But then it seems to me misleading to say that there are different "P-shapes" the plate appears as it turns, if all we really mean by this is that the appearance of the plate changes in such a way that the *patches* needed to hide the plate would have to have different shapes. For then the *only* differences here, in which *shapes* really figure, are *conditional differences in the shapes of the requisite masking patches*. There are, beyond this, no differences in which *shapes* (no matter *how* qualified) *actually appear to you*, as the plate moves. It's just that, *if* you were to block the appearance of the plate, you would need to put differently shaped *patches* in the way, given the change in how the plate appears to you as it turns.

Again, maybe Noë would be happy with all this. But I have a feeling it's not what he had in mind. For if indeed Noë accepted this way of construing his talk of P-appearances then he could say to those (such as Sean Kelly and Bert Dreyfus) whom he says complain he gets the phenomenology of visual appearance wrong (p. 166): *really there is no dispute*. For I cannot believe Kelly and Dreyfus would want to deny that, as perspective changes, the visual appearances of a thing changes, and it changes in such a way that you would need to get differently shaped patches out of your patches box to hide the thing exactly from your view.

So here is the issue I want to raise for Noë. Some things he says make it seem he is committed to a Protean interpretation of CF: where you have *flux in appearances*, you

have *change in apparent shape*. But at the same time it seems he wants to side with Constance, and affirm LC—he wants to allow that there is a bona fide visual appearance of shape constancy. But this seems to leave us with these bafflingly self-contradictory appearances. And I can't make sense of the idea that what appears to me appears at the same time both *to change shape* (from elliptical to round) and *to stay the same shape*. We might try to solve the problem by qualifying the Protean claim with an appeal to Noë's notion of "apparent" or "perspectival shapes." But I don't see that his remarks on P-shape show us how to do this. It's not enough to say that the (Protean) appearances of change in shape are appearances of change in *apparent* shape only. For that may be interpreted as a redundant way of speaking, which leaves the direct conflict in appearances intact. We may look for a non-redundant reading, and distinguish the appearance of shapes from the appearance of *perspectival* shapes, by appeal to the idea that only the latter are the shapes something appears from a given perspective. But it would be wrong to deny that appearances of constancy are *also* in a sense "from a perspective." (Things do not appear constant in shape "*from nowhere*.") We may then try to use the "shape of the interposed patch" idea to pick out the perspectival shape (e.g., the shape, "elliptical-from-here"). But Noë's formula ("the P-shape is the shape of the patch needed to occlude the object…") does not show us how to avoid the problem of contradictory appearances. There is another way to use talk of the shapes of interposed patches to get at what we want to say here. But it's not something I find in Noë's book, and it doesn't sit too well with his way of describing these matters.

5. For Constance

If what I've been saying is correct, then our philosophy of perception faces a choice. Either we make the visual appearance of shape Protean, while isolating constancy over in the content of visual judgment, or else we side with Constance, so as to locate constancy of shape in visual appearance, as well as in judgment.

I think Constance wins this contest. I will explain a little about why I think so, and then I will consider where this leaves Noë's thesis about sensorimotor knowledge. I will argue that Noë shouldn't feel uneasy about rejecting Proteus, if his ultimate allegiance is to the idea that perception is the exercise of sensorimotor knowledge. For that idea is *more defensible* if one breaks with Proteus.

But first: why *not* be a Protean? That is, why not say that there really are no genuine *appearances* of constancy amid flux? No one, I think, is directly attracted to this view by an initial introspective conviction that things appear changing in shape as perspective changes. But, if you start from a strong belief that an object appears the shape given by a two-dimensional projection—so from a given perspective, the round plate looks elliptical, the square table looks rhomboidal, etc.—then this may sustain an acceptance of the Protean picture, once its consequences emerge.

However, I think we can see that this picture is unacceptable, and Constance has the preponderance of reason on her side. To begin we should note this. We do distinguish:

(a) cases where we would judge, by appearance, that something is *changing shape*, from:

(b) cases where we would judge something *constant in shape*, also by appearance, notwithstanding a flux in the way its shape appears.

One way to *describe* this difference would be to say that in (a) something does appear changing in shape, and in (b) it does not—it appears constant in shape. That is to say: *sometimes* things really do appear to morph as we look at them. (Gaze at the shapes in a lava lamp. Watch as a balloon is inflated. See someone's mouth break into a smile.) But, what appears to us does not always appear to morph, *whenever perspective changes*. When something does appear to morph or change shape, that is a *special sort of appearance*, to be distinguished from the others. Ordinarily, as I move about things and they move about me, their borders and surfaces do not appear to bend, swell and fluctuate. This is not to say there could not be some such experience. Perhaps that is how things appear for some of the subjects who have recently had cataracts removed. Noë mentions "the Cheselden boy,"who "after cataract removal surgery...remarks that the coin appears to change shape as it is rotated before him." (pp.102-3) Perhaps, since this boy lacks the kind of sensorimotor skill others have been developing and exercising from infancy—that of knowing how to look at things to determine their shapes—he actually has the kind of Protean experience I am saying we ordinarily do not, as the appearance of shape changes with attention and perspective. The point is: we (normals) would distinguish between changing appearances of shape, and appearances of changes in shape, as the recent cataract surgery patient evidently does not.

So, on one account, for which I seem to have the warrant distinctive of first-person reflection: first, I can distinguish between (a) the appearance of what I judge *by* appearance to *change* shape, and (b) the appearance of what I would by appearance judge *constant* in shape through a flux in appearance. And second, I can correctly report this difference by saying that in the (a) sort of case *something looks changing in shape*, while in (b) something *looks unchanging or constant in shape*.

Now it may be that I can be caused to doubt this, and doubt that reflection does indeed warrant such a description of the differences in appearance I can detect, if I also think introspection warrants affirming claims that things present to me perspectivally varying shapes—as with our old friend, the elliptical-looking plate. For that may seem to lead to Proteanism, which clashes with the description just given. And so first-person reflection would be in conflict with itself. However, we have already seen how a resolution is possible. For we can say all that needs saying, in recognition of perspectivally changing appearances, without committing to Proteanism. We can first, accept CF—we can recognize that there are changes in the appearances of a thing's shape, without saying that it appears to change in shape. And secondly, we can interpret 'It looks to me elliptical-from-here' talk, as saying no more than: 'From here it looks to me a shape that would be hidden by an elliptical patch placed in a plane perpendicular to my line of sight.'

So here is the first reason for rejecting the Protean view. We seem to have warrant for describing the difference between (a) appearances and (b) appearances in a manner that implies things literally appear to us (and are not merely judged to be) constant in shape. We would have no reason to doubt that way of speaking, but for an attraction to the interpretation of perspectival variations in appearance that leads to Proteanism. But we have seen that there is a way to take these differences in appearance into account

without Proteanism. So it turns out I have no reason to doubt what first seemed warranted by introspection: sometimes things appear to change shape, other times (even though the way they appear varies) they do not—they appear to stay the same shape. And if we are entitled to trust first-person judgments about how things appear to us in the absence of good reasons to doubt, our initial way of reporting differences between (a) and (b) appearances stands, and Proteanism is rejected.

Notice the difference between the dialectical positions of the Protean and the non-Protean. Non-Proteans can preserve 'It looks elliptical-from-here' judgments by interpreting them in the "patch" way, not the Protean way. And we have a reason for interpreting them that way—namely, that otherwise it would clash with our introspective reports in which we would distinguish appearances of change from perspectivally changing appearances of constancy. The Protean, on the other hand, cannot preserve these first-person judgments about appearances under any re-interpretation. He has to say they are just wrong: we falsely report an *appearance* of constancy when in fact there is nothing but a *judgment* of constancy. But we have no reason to think some such correction is called for, except for adherence to a wholly unnecessary interpretation of perspectival looks-talk along Protean lines. Now the Protean not only lacks justification for accusing the rest of us of error here; there appears no credible explanation of why we should be prone to this error. For it's not as though we *generally* have difficulty telling when something looks one shape at one time, and a different shape shortly thereafter, though by its appearance we can judge it is actually not changing shape. For otherwise, we should not be able to detect visual illusions of shape, by getting a better look at things, so as to correct earlier appearances in the light of later ones. But we can do this. So why can we operate competently with this conception in such contexts, but fail to apply it properly to cases of perspectival changes in appearance? It seems hard to explain. The reason why such explanation is difficult, I think, is that there is no such failure that needs explaining.

Now it may seem that there is more that needs to be taken into account, to do justice to what makes Proteanism attractive. I would agree. We may have Protean leanings not just because we think something sounds *right* about claims like 'The plate looks elliptical from here,' but also because we think something sounds *wrong* with saying that the plate, just when viewed obliquely—*in that isolated moment*—looks *round*.

Can Constance make room for this? I think so. And I myself concede that it would be a mistake to say that some such little time slice of appearance, conceived in isolation, by itself constitutes *the plate's appearing round to me*. That is, I think that, in that isolated moment—for that little sliver of experience—it is not quite right to say that the plate looks *round*. But that should not sound so strange, if we fully absorb the lessons of Noë's (Chapter 2) critique of the "snapshot" conception of vision.

What makes it sound strange, if it does, is the assumption that—at a given moment, from an angle, in a single "fixation"—there must be *some* geometrically specifiable type of shape an object straightforwardly looks (i.e., looks *not* only in the "occluding patch" sense). But this, it seems to me, is just a manifestation of lingering attachment to this "snapshot" conception of visual experience that Noë rightly criticizes. It is only clearly correct to say the plate *looks round* to you, after you have had a *good enough look at it* to experience its shape, to "encounter" its shape, as Noë says, through

changes in its appearance. And an isolated oblique glance at the thing is typically not adequate for that. However, we also needn't say that "looking round" is something that happens only during some *final stage* of some process of looking at the thing. Rather we can (and I think should) say: some episode of experience *as a whole* is a case of something's looking round, but in a sense that does not *entail* that this also holds for every (or even any) distinguishable temporal *part* of that episode. So again, it seems like Constance can, while preserving her view, accommodate the support that introspection may seem to offer Proteus.

There is yet more that can be said, by appeal to first-person reflection, on behalf of Constance, and against Proteus. First-person reflection seems to support claims like the following. As the plate is gradually tilted, one edge of it appears to *come closer* to me, the opposite to *recede*, until they both look to me about as far away. Now, for this to be true, we must allow that there are *genuine appearances of depth*—near and far is not just a matter of judgment or belief, but of how things *look*. Let us for now grant this is correct. (In a moment we'll examine the viability of denying that we visually experience depth.) Recall that Proteus tells us that what appears shape-wise, as the plate turns from the oblique angle to face us, is a continuous series of elliptical figures gradually rounding to a circle. Now, in holding this view, can he also find room to allow that there are in fact *appearances of depth*, as I've described?

It seems to me the answer is no. Proteus will ultimately be stuck with the old Humean view that "all bodies appear to us as if painted on a plane surface." For consider: if the edge of the plate does *appear* to come nearer, when in fact it does, then it appears to you throughout this time *where it actually is*. There is no discrepancy between where it appears to you, and where it is. On the other hand, if Proteus is right, then as the plate turns, the edge of the figure that appears to you appears to *change shape*—it appears to *bend*, as in fact it does not. A discrepancy then *does* open up between where the edge *is* during this time, and where it *appears*. For if something appears to bend, which actually doesn't bend, it is not just where it appears during the time of appearance, since it appears to move as it doesn't actually move. But now then, if we try to combine these two views, we are back in the position of trying to make sense of a continual and pervasive *conflict* in visual appearance throughout perspectival shifts—the Problem of Contradictory Appearances rears its head again. For: accepting the reality of depth experience, the edge appears to us just *where it is*, rigid for the duration. But then, if we follow Proteus, it also then appears to us *where it is not*, bending. We are back to imputing simultaneously conflicting appearances of shape to ordinary visual perception: here the same edge appears both to bend and not to bend at the same time. All the time, as you walk down the street, the boundaries of what appears to you appear both bending and not-bending, rigid and fluid, at the same time. Again, that gives us no intelligible description of the appearance. And again, it leaves us unable to make sense of how ordinary appearances could be correct.

So—if we are to acknowledge the reality of the appearance of depth, then it seems we should side squarely with Constance. This naturally raises the question of whether there is anything to be said, if someone should seriously wish to deny that near and far are matters of appearance. After all, philosophers like Berkeley and Hume actually *rejected* the idea that depth is visually experienced. Maybe we should follow them.

I think it's clear we should not. Here again Noë's discussion (pp. 96-100) is helpful. He suggests that part of what can make some philosophers' denial of depth experience seem compelling is the idea that the perception of distance requires some sort of movement, extended through time. We can perceive depth through touch because in touching we can push into depth, we can run our hands over a surface, or plunge into it. But Noë points out that there is no reason to deny vision also involves the exercise of special motor skills that enable one to experience spatial features over time. We can experience distance visually with exploratory movement of the eyes and head, much as we can experience it by touch, with exploratory movements of our hands: the gaze corresponds to the grasp. What prevents us from appreciating this is the hazy idea that whatever vision "takes in" should have to be taken in "all at once"—in a single isolated "gulp" of fixation. But that is a groundless prejudice that melts away once made explicit. We also should be on guard (as Noë would be the first to remind us) against the tendency to assume that the content of visual appearance must somehow correspond to retinal images. There is no sound reasoning that allows us to say what is "given in appearance" on the basis of what is "given to the eye."

So, one thing to do, to argue against the denial of depth experience, is to expose and argue against false assumptions sustaining such a denial. Once these traditional confusions and prejudices are identified as such and cleared away, we should have no great trouble in recognizing what without them we should never have thought of doubting: that things look near and far, concave and convex, as well as straight and curved, long and short. There are visual appearances of depth as well as of breadth and height.

If we seek yet more to make this evident, there is more to say. We can here bring to witness situations it is hard to see how to describe otherwise, but as *illusory appearances of depth*. These can take various forms. Consider, for example, more successful instances of trompe l'oeil. Or look at textbooks or video demonstrations of depth illusions. (A nice illustration can be found at: http://www.michaelbach.de/ot/mot_ske/index.html.) Or we could consider the illusion of depth in "3-D" photographs, like those rough surfaced images sometimes found in postcards, or those in the "Viewmaster" toys using "stereo photography." In such cases an (illusory) appearance of depth cannot honestly be denied. Nor can depth be put over in the content of judgment only, as opposed to the *look* of things. For it is clear that nothing is *judged* to be nearer or farther in many such cases.

Faced with all these points and enough such examples, the reality of our visual experience of depth seems to me undeniable. But then, I've argued, a pure Protean view of perspectival changes in appearance is untenable. This conclusion is also supported, as we've seen, by noting its conflict with judgments distinguishing *appearances of change in shape* from *changing appearances of stable objects*, and by seeing how first-person observations that may seem to cast these judgments into doubt (e.g., the intuitive appeal of saying things like 'It looks elliptical from here to me') can be accommodated without Proteanism. Finally, if I am right about the Problem of Contradictory Appearances, then such accommodation is preferable to an attempt at compromise that would preserve Proteus' desire to think of changes in shape appearance as appearances of change in shape. For that cannot coherently be mixed with accepting that shape constancy is

genuinely *apparent*, and not just *judged*. So, I conclude: while we should honor the truth behind Proteanism, the doctrine itself has to go.

6. Constancy and sensorimotor knowledge

Perhaps Noë will be reluctant to agree with me. If so, I would like to suggest that his reluctance might be lessened somewhat, if he could be convinced—as I will now try to do—that I am not asking him to abandon his central theoretical commitment here, which I take to be this: the perception of how things are shaped (like perception generally) essentially involves the exercise of sensorimotor skills. For I think what I've been arguing actually helps support it.

First: how should we interpret this thesis? As applied to the visual perception of shape, I would offer the following. To see how something is shaped, you need to know how to look at it. You need to know what to do to get a good enough look at it, for its shape to become apparent to you. Or, as I would also put it: you need to know how to run your gaze over it in a way that anticipates (is appropriate to obtaining) further appearances, appearances that, together with those already garnered, will, as a whole, constitute an experience of its (actual) shape. You need this, not because this movement contingently provides you with the means by which your brain constructs visual representations of shape. For (I would say), once we abandon "movie in the head" conceptions of visual experience, then the appearances you experience can count for you as appearances of an object—appearances of something constant, in e.g., shape, through a flux in appearance—only if later appearances are appearances anticipated through sensorimotor activity. For it is only insofar as we are able, through movement, to anticipate future appearances successfully, that we are able to conceive of the changing appearances we experience as changing appearances of the same constant thing.

At least, it is in some way such as this that I am inclined to understand the sort of "constitutivist" thesis regarding perception and sensorimotor knowledge that lies at the heart of Noë's book. But then, I don't see that this (or something like it) would be helped by holding that ordinary perceptual experience of our environment is Protean in character—that what is apparent to us are continually morphing two dimensional shapes. On the contrary: the Protean conception, it seems to me, rather lends itself more to the "merely instrumental" view of sensorimotor activity, and the pictorialist conception of vision, against which Noë so determinedly campaigns. For suppose we think that what appears to us are these perspectivally shifting shapes. Then it is tempting to suppose that the role of sensorimotor activity is just to get us access to the information that can be plugged into constancy formulas somehow represented in our minds that allow us to compute representations of an object's actual shape from represented perspectival shapes. Thus, it's unclear why the relationship of sensorimotor activity to the content of visual perception should be seen as any more "constitutive" (as opposed to "merely instrumental") than the relationship of the camera's movements to the images it captures. I suggest that Noë would be in a better position to avoid this conception of perceptual constancy, and defend a constitutivist view of sensorimotor activity, if he distanced himself more from Proteus and his classical empiricist friends.

Let me try to argue this point a little further. First grant me this: if I am to consider a given episode of changing appearances as constituting the appearance of

something with a certain constant shape, I need to be able to think of the constituent appearances as appropriately related amongst themselves. But how can I do that? Only insofar as I can, with some such episodes, think of later appearances as comprising a better, fuller look at what earlier appeared to me. But what is it to "get a better look" at something? If we accept the Protean view that the changing appearances are appearances of determinate ever-new shapes, then getting a better look will amount to this: obtaining (by whatever means) further visual representation of perspectivally changing shapes, which will stand in the relation to earlier representations of such shapes that is specified by the formula yielding what actual shape something has from information about changing apparent shapes, together with information about one's bodily movement. But in that case, we can, at least in principle, form a conception of what it is to get a better look at an object, entirely in terms of this formula. Exercise of one's sensorimotor knowledge is merely the way we happen to get the information to plug into this rule linking perspectivally changing shapes and the representation of movements—this rule that tells us what it is to get a better look at an object, and what it is for a given flux of perspectival appearances to constitute appearances of a constant object.

On the other hand, suppose we completely rid ourselves of the Protean picture. We then do not regard the perception of constancy as anything like the product of a series of perspectival snapshots. For there is no series of varying determinate shapes something (straightforwardly) appears, in a series of perspectival views ("snapshots"); a thing's shape is only truly apparent once one has had a chance to do what is needed to get a good enough look at something to tell what its shape is. But then there is no way to conceive of the flux of appearances as yielding a better look at some constant object of appearance, via some rule linking representations of perspectivally changing shapes and motor information. In that case, there is no way to understand appearance of a thing's shape, in abstraction from exercise of the sensorimotor skills through which shape perception is achieved. What then is it to get a better look at an object? To get a better look at something is to do something, to look at it better—it is to exercise relevant sensorimotor skills. Thus what it is for perspectivally varying appearances to be "appropriately related" amongst themselves so as to constitute the appearance of a constant object is something understood only by exercising or enacting these skills.

This is admittedly only an argument sketch, concerning matters that are still rather obscure (to me at least). But I hope there is enough here to make evident a potentially stimulating challenge to Noë.

I am interested in getting clearer about this, because I am very interested in the nature of the enactive conception and its justification. For it seems to me (though I cannot now make the case) that a strongly sensorimotor view of perception has the potential to reshape our understanding of a lot of issues—ranging from our conception of the aims of the psychology of perception, to skepticism about our knowledge of the "external world," to the developmental basis of human and animal intelligence, to the explanation of phenomenal consciousness—as Noë, I believe, would be happy to agree. And it has the potential to shed light on all these issues in a way that engages creatively (as indeed Noë's work does) both with empirical psychology, and with the modern Western philosophical tradition—from British Empiricism, to Kant, to Wittgenstein and the

Phenomenological Movement. So it seems to me fascinating territory eminently worth exploring. And I look forward to learning more from Noë about it.