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De-eclipsing Common Sense: Why We See Near rather than Far in Roy Sorensen's Eclipse Riddle

ALESSIO GAVA
Universidade Estadual do Paraná, Av. Minas Gerais, 5021 – bairro Vila Nova, 86800–970 Apucarana – PR Brazil
alessiogava@yahoo.it

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ABSTRACT: According to Roy Sorensen, when one looks at the Moon, during a solar eclipse, what she sees is its inner (concave) part of the farther, reflective one, and not the always-facing-Earth side of our natural satellite. To make his point clearer, he put forward the famous example of a double eclipse involving the fictional planets Far and Near. From the observer's vantage point, the two planets have the same apparent diameter and overlap. What the agent sees is a dark disk, but believes that what she is seeing is Near, because Far is behind it. Sorensen claims that what she actually sees is planet Far and that the causal theory of perception explains why this is the case. Of course, this position stands against common sense. Sorensen shows that it counters Alvin Goldman's renowned observation criteria too. Nonetheless, he maintains, since Near is causally idle and the agent does see something, the only possible conclusion is that she sees Far, *pace* Goldman – and common sense. In this paper, I try to demonstrate that Sorensen is wrong and that the correct solution to the eclipse riddle is that the observer sees Near. As a matter of fact, besides meeting common sense and Goldman's observability criteria (along with others), Near can be legitimately be considered the object of a successful perceptual discrimination even in the light of the causal theory of perception.

KEY WORDS: Causal theory of perception, eclipse, Goldman, observation, *Seeing Dark Things*, silhouettes, Sorensen.

> "Common sense wisdom is the soil of reason and always provides a healthy antidote against the vagaries of speculative philosophy."
>
> Ghins (2005: 95)

> "By all means, correct common sense when it's mistaken."
>
> Sorensen (2008: 202)

Roy Sorensen's *Seeing Dark Things* (2008) has been deservedly hailed as a very interesting, captivating and instructive book, while at the same time quite easy to read and understand. Yet, it raises difficult questions, to which Sorensen gives, in some cases, controversial answers. One of them is the famous "eclipse riddle", originally discussed in his prize-winning article "Seeing Intersecting Eclipses" (1999). The first two chapters of *Seeing Dark Things* are devoted to this topic.

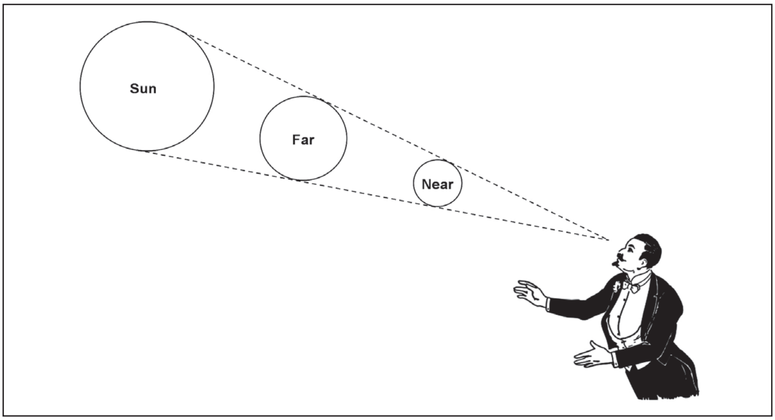

Figure 1 – Double-eclipse scenario

As is well known, according to Sorensen, a magician witnessing a double eclipse such as the one sketched above would see planet Far – its absorptive surface, actually, which would be the inner (concave) part of the farther, reflective one – and not planet Near, for the first is blocking light, while the second is causally idle.

Sorensen thinks this is "a bold consequence of the causal theory of perception given natural background assumptions" (2008: 42); but, admittedly, it is also counterintuitive and paradoxical (see 2008: 49). The aim of this paper is to show that the idea that we see Far rather than Near is in fact paradoxical and that, in a double-eclipse scenario, what we actually see is Near.

The role of the causal theory and the only two alternatives

As Sorensen explains, Far does not satisfy any of the three conditions Alvin Goldman proposed to determine whether an object is seen and does seem to violate any counterfactuals-based criteria of observation (see 2008: 22–24). Yet, he considers that we should favor the causal theory[1] and conclude that,

[1] But isn't this a top-down approach, contrary to Sorensen's initial "declaration of intent" (see Sorensen 2008: 19)?

since it is Far that blocks light (and not Near), it is Far that we also see (and not Near).

According to the causal theory of perception, there must exist an appropriate causal connection between agent S and object O in order for the former to see the latter. Then again, blocking light is but a necessary condition for seeing an object when backlit, because it is not only by virtue of the light it blocks that we see a cat silhouetted against the moon (see 2008: 22), but also of the differences it makes with its surroundings (see 2008: 55). A cat blocking only a thin laser beam in a moonless night cannot be seen.

On the other hand, says Sorensen, this necessary condition precludes the possibility that we see Near during a double eclipse, because the planet is totally within the shadow cast by Far and, above all, causally idle (see 2008: 22).

The other two possible alternatives are not taken in much consideration by Sorensen. If, in a double-eclipse situation, we cannot see Near, for it does not block light, but admitting that we see Far seems too great a burden to bear, then perhaps one could conclude that we actually see nothing. Sorensen dismisses this possibility in a few words: "When a theory of perception predicts that you cannot see something that you do see, then you ought not to believe the theory" (2008: 6). I agree with him on this, something *is* seen during a double eclipse. The alternative that we see nothing is rightly ruled out.

But then perhaps what we see is neither Far nor Near, but the scattered object Far + Near (see Aranyosi 2008). I agree again with Sorensen, though. Saying that we see this mereological sum makes no difference and is of no advantage at all (see Sorensen 2008: 59–60). For the question would arise anyway: which part of the scattered object would we be seeing? Near or Far?

We are left with only two alternatives then.[2] Sorensen says the magician sees Far (he is a magician, after all). I hope I'll be able to show that, despite his magical talent, the conjuror actually sees Near, as we all do.

The cognitive ingredient of observation

Since obtaining information is a necessary condition for observation, Sorensen conveniently shows that his account of vision in backlit situations contemplates also the acquisition of information. In a section called "Why we see the *backs* of silhouetted objects" (see 2008: 60–64) he uses the example of a solar eclipse to show that the acquisition of information during such an event is consistent with his theory.

[2] I do not think anyone would claim that we should consider the alternative that what we see are sense-data, nowadays; let alone the alternative that what we see is another entity, distinct from the two planets. Either we see Near or we see Far. Or so I argue.

He succeeds, but the gain in knowledge he mentions (there are no huge tunnels running straight through the Moon; we can see peaks of mountains along the profile of the only natural satellite of planet Earth) is also compatible with the common sense idea that what we see during the eclipse is the side of Moon which is always facing Earth. It is thus evidence in favor of Sorensen's account only in the sense that it is not against it, but not in the sense that it privileges his thesis over others.

Reverse optical relationship

One argument Sorensen puts forward in order to defend his claim that in the double-eclipse scenario he depicts what we see is Far and not Near is that, in backlit conditions, the closer a silhouette is the darker it appears. He maintains that, since the silhouette an observer sees in his *Gedankenexperiment* is less dark than how Near's one would appear, were Far not present, then it must be Far's.

I am afraid this is not evidence in favor of the claim that what the observer sees is Far's silhouette, though. Sorensen writes: "Were it not for Far, Near would have a silhouette darker than the one we are now viewing, for the extra brightness of the background would make Near's silhouette darker by comparison" (2008: 26). True, but since Far is present, the brightness of the background *is* reduced and Near's silhouette *does* appear less dark as well – as it seems to be implicitly admitted in Sorensen's passage.

This means that the amount of darkness of the observed silhouette were probably the same, be Near present or not.[3] If such is the case, then the silhouette's "lack of darkness" cannot be evidence in favor of the thesis that what we see is Far. This fact is perfectly compatible with the opposite thesis, that what the observer sees in a double-eclipse scenario is Near.

Silhouettes

Persuaded that endorsing the causal theory of perception would bring one to conclude that during a solar eclipse what we see is the absorption layer of the Moon and not the surface facing Earth, Sorensen is forced to assume that in backlit conditions the silhouette of an object coincides with its absorptive surface. Common sense tells us that the silhouette of a body is the "attached shadow", instead (see Sorensen 2008: 28).[4]

[3] Were it different, that would be evidence in favor of the thesis that what we see is Near!

[4] That would be its two-dimensional "beginning", the leading edge of a three-dimensional volume (the shadow), while the "cast shadow" would be its two-dimensional "end".

A look at five among the best-known dictionaries available on-line[5] does not help settle the question, for all of them say either that the silhouette is but a dark shape or that it is the outline of a body (or both), but none of them takes party on the issue of which surface that would be – provided that there is a party to take, for Sorensen's seems to be an isolated position, not to mention that both Collins and Macmillan dictionaries associate the silhouette with the shadow of a solid figure.

Then again, even if they stated that the silhouette is that part of the shadow's surface which is attached to its caster, they might just be wrong – under the assumption that we call *silhouette* what we see in backlit conditions, of course.

Since it is commonly understood that the silhouette of a body *is* what we see when we look at the entity in backlit conditions, what Sorensen should show, in order to maintain a bottom-up approach, is that the former corresponds to the absorption layer of the observed entity (in the case of the Moon during a solar eclipse, the inner (concave) part of the surface that faces the Sun, for example). Then, of course, this would amount to saying that what we see in backlit conditions *is* the absorption layer of the observed body.

In his book, Sorensen claims that the silhouette is a part of the object even before trying to convince the reader that it is legit to do so (see 2008: 26 and 31). However, he then presents a section called "A rationale for the silhouette rule", in which we learn that a good rationale "for counting the sighting of a silhouette as a sighting of the object is that the visual match is good enough" (2008: 36). Sometimes cast shadows too exhibit a good visual match, but not always. What happens in general is that an object's "genuine silhouette has a more robust resemblance to the object than does the object's cast shadow" (2008: 38). Why is that so? The answer comes in the next section, which is about shadows as pseudoprocesses. Seeing the silhouette of an object amounts to seeing the object, says Sorensen, while seeing its cast shadow is merely seeing an effect of it (see 2008: 39).

Of course that explains the most robust resemblance that a silhouette has if compared with a cast shadow, but not why the silhouette actually *is* part of the observed body. Inferring that the silhouette cannot be part of the shadow because of the difference with the *cast* shadow would clearly be a fallacy. The argument is still compatible with the thesis that the silhouette corresponds to the part of the shadow which is attached to its caster – its leading edge.[6]

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[5] Merriam-Webster, Cambridge, Oxford, Macmillan and Collins.

[6] In this case, observing the silhouette would still count as observing its caster, such as when I notice the new shirt a friend of mine is wearing at the same time that I see him. Or the logo of a tire company on the side of a blimp. The same goes for the cast shadow on a wall. One can see both the shadow and the wall at the same time.

Therefore one cannot rule out this possibility and conclude that, since there are no other alternatives, the silhouette must be part of the observed entity (inferring that it corresponds to the absorption layer would require an additional step, for it is not obvious that this would be the chosen part; as a matter of fact, the resemblance argument is also compatible with the idea that the silhouette is the surface of the object that is facing the observer).

Sorensen puts forward another example, however. Imagine a blimp moving in the sky: as we all know, the shadow that the aircraft casts on the ground follows the caster's movements. "But the stages of the shadow's movements are not related as cause and effect. Rather, they relate to the stages of the blimp's movements". Sorensen concludes that this is an instance of what Elliot Sober and Wesley Salmon call a pseudoprocess, "governed by the blimp's movement" (2008: 40).

The stages of the silhouette's movements, on the other hand, he continues, are related as cause and effect. For any change of the silhouette is inherited by its future stages, while this is not true of the cast shadow. Therefore, when we look at the silhouette of the blimp, we see a causal process.

The conclusion Sorensen infers out of this example is that, since "an intrinsic change in the silhouette constitutes an intrinsic change in the object, the silhouette is part of the object" (2008: 41). My claim is that, instead, this is true only if we have already assumed that the silhouette *is* part of the object.

The other way around, the sentence is obviously true: if the silhouette is part of the object, then an intrinsic change in the silhouette constitutes an intrinsic change in the object. But the way Sorensen puts it is not. For if, following common sense, one assumes that the silhouette of the blimp is its attached shadow, then there could be intrinsic changes in it that do not result in a change in the object. Suppose one points a stage light to the blimp and follows its movements so that the logo of a tire company, painted on the side of the blimp, is always on sight. That would be an intrinsic change on the silhouette (interpreted as being the leading edge of the shadow) with no influence at all on its caster.

In sum, for Sorensen's claim – that any permanent change in the silhouette results in (corresponds to, actually) a permanent change in the object – to be true, we must assume that the silhouette *is* part of the object. But then the circularity is patent.

Back to square one, then. In the two sections devoted to discussing silhouettes, what Sorensen actually shows are mere *effects* of his *postulation* – or rather, of what he thinks is a consequence of endorsing the causal theory of perception – that a silhouette is part of the object observed in backlit conditions. They are not evidence in favor of this thesis – let alone in favor of the thesis that the silhouette corresponds to the absorption layer of the observed entity. The only argument he has (but it's a powerful one!) is the appeal to the causal theory.

My claim is that the silhouette of an object is not what Sorensen thinks it is. But I will also try to show that his thesis is not a consequence of the causal theory either, or else we would be forced to reject it, via *modus tollens*, and that would be a too strong and undesired result.

Let's now turn, then, to why I disagree with Sorensen on what happens when we look at something or someone in backlit conditions.

The phenomenological side

Sorensen's account of what happens in a double-eclipse scenario – and in backlit objects vision in general – does not seem to correctly capture the phenomenological aspect of observation. Borrowing Marc Alspector-Kelly's words, we might say that the sense that one really is looking at Near when she sees a Sorensenian double eclipse, or at the nearest face of a backlit object, is phenomenologically irresistible (see Alspector-Kelly 2004: 336). It is common sense too, of course.

This kind of awareness comes, among other things, from the consciousness (usually implicit) that observation is an action, involving the body as a whole, even when we only focus on vision.[7] If one wants to see the inner part of an eggshell, she cracks open the egg, removes its content and looks inside. She does not point it against the moon at night. We know "by default" that it would be useless – and weird too… But I will not press this subject further and focus instead on a paradox that I think is a consequence of assuming Sorensen's view on backlit vision. Before that, a couple of words about the object of perception is in order.

The object of perception

John D. Greenwood defines *the intentional object of observation* as being "the object or state of affairs which is the real object of our successful perceptual discrimination". The intentional object of observation, explains Greenwood, "exists quite independently of any theories I have about it, and my theory about it and observation of it plays no role in its constitution" (Greenwood

[7] "Ocularism" is the term Hasok Chang coined for the privileging of the sense of vision over all others (see Chang 2004: 879). Sorensen himself admits, in the introduction, that his book "is philosophy for the eye" (2008: 9).

1990: 558). This clearly applies to any entity observed in backlit conditions as well.

Along the same lines, in a well-known paper on the topic, Roberto Torretti wrote that observation is an "attentive, deliberate, explicitly cognitive mode of perception" (1986: 1). I am not sure about the "deliberate" part, because which is the object of perception is not always the result of a conscious decision on the agent's part. Still, we might consider it as being what "catches the attention" of the agent, that is external to her and causes a mental state to the subject that she did not have before the perception. In other words, the object of observation is the entity on what the agent's attention focused, or by which it was triggered.

Suppose Roger Federer is visiting the extraordinary archeological site of Paestum, at sunset, during the Paestum Balloon Festival. The Swiss athlete is pointing a tennis ball to the Sun while at the same time a perfectly spherical balloon passes in front of the star that the ancient Greeks called Helios. From Federer's vantage point, the tennis ball and the balloon have the same apparent diameter and overlap. All he sees is a dark disk, but he believes that what he is seeing is the tennis ball he is holding.

According to Sorensen, however, the Swiss is wrong. Unbeknownst to him, what Federer is actually seeing is the (internal) side of the balloon that faces the Sun. But is that so? Let's take a look from the above:

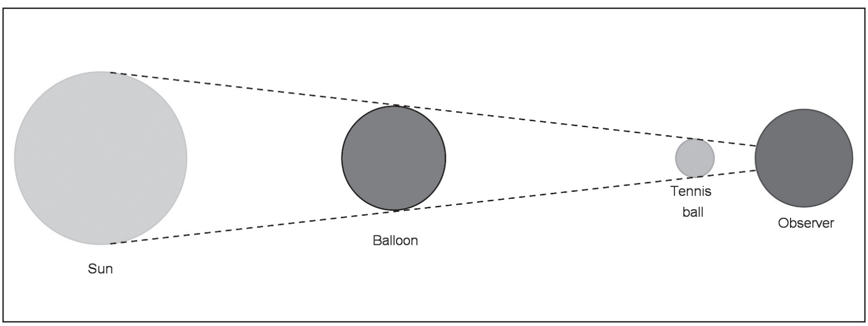

Figure 2 – View from above

The situation is totally analogous to the double-eclipse scenario sketched at the beginning of this paper and we already know the reason why, according to Sorensen, what the observer sees is the inner (concave) part of the surface of the balloon that is facing the Sun. But let's now consider another "view from above", this time depicting the actual visual rays – as Euclid would have done, drawing straight lines from the eyes of the observer to the surface of the object that he is seeing (or judges he is seeing, according to Sorensen).[8] I will take into account *both* eyes, however.

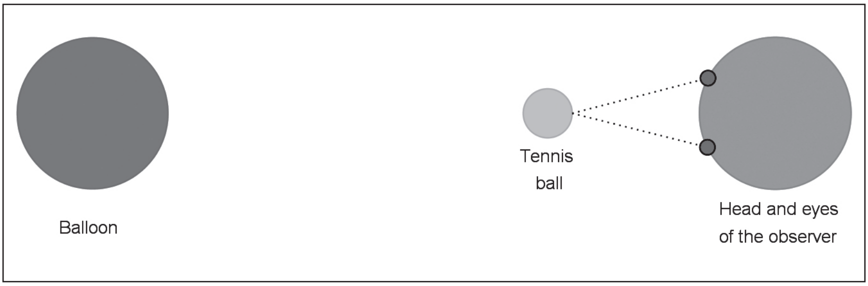

Figure 3 – View from above (vision of the tennis ball)

If the observer wants to see the tennis ball, his eyes focus on it (see the trajectory of the visual rays in the sketch above), be the ball frontlit or backlit. If he wants to see the balloon, instead, he first takes the tennis ball out of the line of sight and then his eyes focus on the balloon (see the trajectory of the visual rays in the sketch below), be it frontlit or backlit.

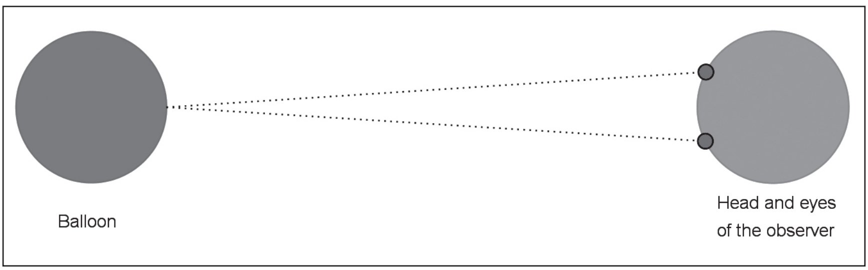

Figure 4 – View from above (vision of the balloon)

What have been sketched are two different actions, leading to two different results. In the situation depicted in figure 3 above, a tennis ball is the real object of a successful perceptual discrimination; in the situation depicted in figure 4, it is a balloon. Two different actions, two different objects of perception. Or so I argue.[9]

[8] Sorensen thinks Euclid's optics is not fit for dealing with backlit observations: "…silhouettes force a correction of Euclid's optics. A complete geometry of the visual field must include backlit objects" (2008: 8–9). Yet, he only tells us *why* we should do it, but not *how*. And this is a general remark I have on Sorensen's position: he tells us *why* we see the absorptive surface of an object when backlit – rather than the side that is facing us – but does not explain *how* this happens. Old Euclid's optics does.

[9] A little research on ophthalmology on the internet confirms that it is actually so. "Just behind the pupil (the black hole in the center of your eye) and iris (the colored part of your eye),

Once again, the lesson we can draw from all this is that in talks about perception we should take into account that observation is an action, involving the whole body, even when we focus on vision alone.

Sorensen did not take this into account and this lead him to peculiar conclusions, to which he would have probably not gotten had he followed this piece of advice. His results are not just peculiar, though. They are paradoxical too, as I will now try to show.

An astronomical paradox

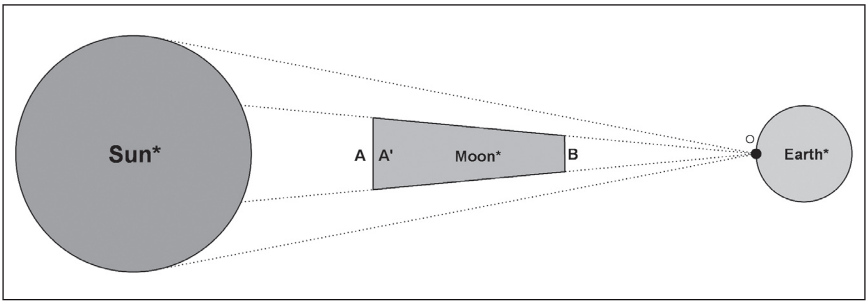

Figure 5 – Eclipse scenario on Solar System*

In a solar system similar to ours, Earth*'s natural satellite has the form of a truncated cone and occupies a position in space such that, during a partial eclipse of Sun*, for an observer on point O on Earth*'s surface, Moon*'s nearest surface – B – is close enough to exactly compensate for its smaller size with respect to shadow formation. B and A – Moon*'s farthest surface – look the same size from the observer's vantage point. (Note how disc A and disc B have the same apparent diameter in the picture above).

The height of the truncated cone – i.e., the distance between A and B – is 10 light-seconds. The distance between Moon* and Earth* – i.e., between B and O – is 10 light-seconds too.

According to Sorensen, contrary to common sense, what the subject in O observes (sees) in this situation is not surface B but A', that is, the inner part of the illuminated surface (which, in this case, is A).

lies the crystalline lens, which is connected at its outer rim to the ciliary body by ligaments called zonules. The lens focuses light rays on the retina, the thin, light-sensitive inner layer at the rear of the eye. Muscles in the ciliary body enable the flexible lens to alter its shape and allow the eye to focus on objects at varying distances. When you look at a tree far away, for instance, the muscles relax and stretch the zonule ligaments, which in turn pull on the lens, causing it to flatten and assume a thin contour. But shift your gaze to something close, such as a computer screen, and the muscles contract and loosen the zonules, which makes the lens thicker and curved more in the middle. The ability of the lens to focus from far to near is called accommodation" (Fine 2016).

However, on surface B (which, as happens with "our" Moon, always faces Earth*) a huge space station has been built, occupying the most part of the truncated cone's minor base – being always in the dark and protected from Sun*, the temperature on B is fit for living and all the devices work without major problems. When the base is in operation, it can be seen from Earth*, because of the huge quantity of light used – it resembles a big city at night, seen from a space shuttle or from an airplane. In this other case, Sorensen admits that what the subject in O observes is B, because observing a relevant part of an object amounts to observing the object.

Suppose now that the base on surface B is in full activity, while a sudden power outage occurs. During the first 10 seconds, the observer in O keeps seeing the illuminated base – therefore surface B. Right after that, she starts seeing a dark disk. What would that be? I do not think Sorensen could claim that the observer started seeing A' immediately after seeing B. Right, in *Seeing Dark Things* he says that "the image of the silhouette does not need to travel through the wall to reach the observer. The darkness lying between the long side of the wall and the observer is there by default" (2008: 28). I agree that the image of a silhouette does not travel through solids. Let's also assume, for the sake of the argument, that it is "already there", by default, as Sorensen claims. Then perhaps he could try and use a similar argument to defend that, at the very same moment in which she "sees" the power outage, the observer in point O starts seeing A' (and does not see B anymore). But would this be a legitimate answer?

If, instead of a power outage, what happened were a sudden disappearance of Moon*, during the first 10 seconds the observer in O would still see the illuminated base, therefore surface B, exactly as in the case of the power outage. 10 seconds later she would see a dark disk (again), but in this case that would be a sort of "light gap". After another 10 seconds, a "light disk" would reach her eyes and fill the "hole" in the image of Sun*. Why would this be the case for light, but not for the image of A'? It is worth noting that, as said before, in order to defend the idea that the observer actually sees A' during an eclipse, Sorensen maintains that information gathering (about A') *does take place* (see 2008: 61–62) and that, as he remembers us, according to the relativity theory, no signal can travel faster than light (see 2008: 41). Now, the image of A' carries information, therefore is a signal and cannot travel faster than light.[10] This means that the only way it can reach the eyes

[10] It could if it were a shadow, according to Sorensen (see 2008: 41). But his point is exactly that a silhouette is *not* a shadow (or part of a shadow). I must add that I disagree with Sorensen over the alleged possibility that a shadow can travel faster than light. The slogan "No host, no parasite" (see 2008: 142) he uses about what he calls "para-reflections" is true of shadows as well. All holes are metaphysical parasites (see 2008: 187). Since shadows are holes

of the observer at the very same moment in which she ceases to see B is that the image is "already there". But what would this mean? Wouldn't it be just an *ad hoc* answer, with no real meaning?

Note also that in case we admit, in the power outage example, that the observer keeps seeing surface B, even after the power failure, no apparent paradox would arise and the account of this event would sound far less artificial… Let's see, then, why I think the correct answer to the eclipse riddle is that the observer sees Near and not Far.

Why we see Near rather than Far

Admitting that in Sorensen's double-eclipse situation we see Near (its facing-the-observer surface) rather than Far has some positive collateral effects, that have already been mentioned before: it saves both common sense and the (probably related) phenomenologically irresistible feeling that what we are seeing is actually Near; it is compatible with the information that, according to Sorensen, we gather through observation; it solves the astronomical paradox presented in the previous section.

Still, one might legitimately think that, once we have rejected Sorensen's idea that what we see is Far, we should only admit that what we see is Near provided it satisfies some observation criteria. I claim it does, as will now try to show.

First of all, let's examine the three factors to determine whether an object is seen that Goldman famously identified (see Goldman 1977). Does Near satisfy the environmental condition? Sorensen thinks it does, but also that it violates the other two (see Sorensen 2008: 24). He thus concludes that, according to Goldman's requirements, Near is not seen.

Strictly speaking, though, Near does *not* satisfy the environmental condition, for it is not illuminated (see Goldman 1977: 262). We might ignore this constraint, however, or loosen the environmental requirement, as Sorensen seems to do, and merely focus on the fact that Near lies within a conical region radiating outward from the perceiver's open eyes. With this qualification, Near *does* satisfy the environmental condition – while Far does not.

Let's now turn to the counterfactual dependency condition. Sorensen judges that Near does not satisfy it because, were the planet not present, the scene would appear the same to the perceiver. But perceptual content, as Alva Noë explains, is two-dimensional: "It can vary along a factual dimension, in regard to how things are. And it can vary along a perspectival dimension,

in the light, how can my thumb's shadow move faster than the speed of light if it only exists provided that there is light surrounding (and traveling with or "carrying") it?

in regard to how things look from the vantage point of the perceiver. Visual experience always has both these dimensions of content" (Noë 2003: 95). For this reason, "the right sort of counterfactual supporting dependence must be maintained along both dimensions of content" (2003: 96).

I agree with Noë on this and argue that his remark applies to the case of Near too (as to any other case), for suppose the observer travels East on a space shuttle, then of course the scene before her eyes would be different and would certainly appear different to her – in other words, her visual experience would consequently be different. Which means that Near *does* satisfy the counterfactual dependency condition.

Observation has to do with (the possibility of) triangulating and keeping track both of how things are *per se* and of how they are in relation to the perceiver (see Noë (2003: 96); but also Ghins (2005: 96), Azzouni (2004: 129–136), Bueno (2011: 278) and Buekens (1999: 26), among others). And with the fact that "our perception of the world is essentially that of an embodied agent, engaged with, or at grips with the world" (Taylor 1979: 154).[11] Sorensen seems to have disregarded all this and concluded that neither Near nor Far satisfy the counterfactual dependency condition. I claim that, contrary to his conclusion, Near does – for the reasons that have just been shown.

Perhaps two factors out of three are enough to defend that what one sees during the double eclipse depicted in *Seeing Dark Things* is Near,[12] but we still might score 100%. The third condition is the so-called "physical mechanism factor", which "involves the transmission of light from objects to the perceiver's eyes" (Goldman 1977: 266). Now, it is certainly true that, during the eclipse, Near does not transmit light to the perceiver's eyes; but the scene in front of her does and Near is part of it. "Seen objects normally make a *holistic* contribution to the scene", admits Sorensen, adding that they "are visible by virtue of the differences that they make with their surroundings" (2008: 55). He also considers, however, that they should *cause* the contrast (see 2008: 65) and that this explains why we don't see Near, despite it being part of the scene being observed, for it is Far that blocks light (and not Near).

To this, some might answer *kantianally*: it is the scene before her eyes as a whole that causes the subject's perception, not a single object. Near is part of the scene and this might be enough to claim that it *causally* contributes to the perception.

Along the same lines, one might think that, since we are able to see something only via perceptual discrimination, then we do not see Near (or

[11] "In perception, the world acts on us, and we act right back" (Noë 2003: 100).

[12] That's what happens with black holes, for example, according to Sorensen (see 2008: 23).

Far) alone, especially if they are not illuminated.[13] This also means that what allows the subject to see Near is not the light blocked, as claimed by Sorensen, but the light reaching her eyes, which "carries" the planet's image.[14]

The point is that even in case we are not ready to admit that anything which is in the visual field of the perceiver is responsible for what she sees, we must at least admit that it cannot be a planet alone either. With this in mind, it can be claimed that since Near is part of the scene that reaches the eyes of the perceiver, it satisfies the physical mechanism factor and can be legitimately considered the object of perception in the double-eclipse scenario imagined by Sorensen.

In addition, we can also affirm that, contrary to what Sorensen maintains, since the human eyes are photoreceptors, then we *do* need light to see.[15] This allows us to reverse some of the claims Sorensen makes in his book. "Consider the black letters on this page. You see them in virtue of the light they absorb, not the light they reflect" (2008: 4). I argue that we see them by virtue of the light that their immediate environment reflects, instead. "The bird watcher sees the stork by virtue of the light it *blocks*" (2008: 7). Same thing. "A cat silhouetted against the moon can be seen by virtue of the light it blocks" (2008: 22). I claim it can be seen by virtue of the light the moon reflects, in lieu. And yes, of the contrast between this and the silhouette too – whatever that is. And so on.

As an alternative to the idea that Near causes the perception because of its holistic contribution to the scene before the subject's eyes, we might follow István Aranyosi and appeal to David Lewis's concept of causation as influence (see Aranyosi 2008: 513–514). There are slight changes in Near (or better, following Noë, in the Near-perceiver relation) that would generate corresponding changes in what the agent experiences. Any relative displacement between the planet and the observer would result in a change in her visual experience. Therefore, the actual position of Near *is* responsible for her actual percept.

Finally, one could also appeal to old Aristotle and think in terms of final cause. If the subject is focusing her eyes on the point where Near stands, it is probably because she wants to see this planet, rather than the one behind it.

[13] The kind of exception Dretske admits for some limiting cases such as when the subject stands with her nose against a concrete wall, unable to visually differentiating it from its immediate environment (see Sorensen 2008: 63), does not apply here – if one stands with her nose against Jericho's wall in a moonless night (during a power outage, if you want), then she does not see it.

[14] The same goes for Far, in case one wants to endorse Sorensen's position.

[15] "The eye moves continually to keep the light from the object of interest falling on the fovea centralis where the bulk of the cones reside" (Nave 2012).

In this other case, she would probably wait for the Sorensenian alignment to cease and focus on Far – or take a space shuttle and circumnavigate Near, in order to see Far, in case the alignment is static. Being so, Near can be thought of as being a cause of what is seen. Exactly as the Stagirite would have done.

In sum, I claim that, since we lack an official definition of *cause*, Near can be thought of as being the cause (or one of the causes) of the percept in the double-eclipse scenario depicted by Sorensen. His idea that endorsing the causal theory of perception necessarily leads us to conclude that the object of perception in his *Gedankenexperiment* is planet Far is suggestive but wrong. This also means that the silhouette of an object needs not be identified with its absorptive surface, but can very well be identified with that part of the shadow which is attached to its caster (as perhaps has always been).

Near can do better than "simply" comply with the causal theory of perception, however. As we have seen in this section, it can score 100% in Goldman's "test" and satisfy a characterization of perception in terms of the relevant counterfactual conditionals. Which leads us to conclude that in the double-eclipse situation depicted in *Seeing Dark Things* what is seen is planet Near (while in a solar eclipse is the same old face of the Moon) and not planet Far, *pace* Sorensen.

Conclusion

When one looks at the Moon, during a solar eclipse, she probably thinks that what she is observing is the always-facing-Earth side of our natural satellite. Sorensen reckons this is wrong and maintains that what the agent is actually seeing in such a circumstance is the Moon's inner (concave) part of the farther, reflective one.

To make his point clearer, he put forward the famous example – depicted in the introduction – of a double eclipse involving the fictional planets Far and Near. In this *Gedankenexperiment* the two celestial bodies look the same size from the observer's vantage point. "When Near falls exactly under the shadow of Far, it is as if one of these heavenly bodies has disappeared. Do I see Near or Far? Common sense answers that I see Near rather than Far: Near is an opaque body that completely blocks my view of Far. Since I see something, I see Near" (Sorensen 2008: 20).

However, Sorensen explains, since Near is causally idle, it is in fact invisible. "If light were being reflected by Near into my eyes, Near would preempt Far. And I would see Near. But because I am actually seeing by virtue of partial light blockage, it is Far that preempts Near" (2008: 22). Accordingly, we should not let common sense deceive us and admit that the object of our perception in the double eclipse case is planet Far. "The correct solution to the eclipse riddle is that I see Far. This answer follows as a bold consequence of the causal theory of perception given natural background assumptions" (2008: 24).

Common sense can obviously be mistaken, sometimes. Should we always stick to it, we probably would not have the theory of relativity in Physics, to mention just one example. Then again, Sorensen thinks that we should remain faithful to the causal theory of perception not only against common sense, but against common vision (observation) criteria too. And this should raise a red flag. Are we sure that seeing Far is a bold consequence of the causal theory of perception in the so-called "eclipse riddle"?

I answer in the negative and in this paper not only have I tried to show that Near can be considered the object of a successful perceptual discrimination even in the light of the causal theory of perception – all the more so because, to my knowledge, despite centuries of debate over this concept, we still lack an "official" definition of *cause* – but also that this idea is in total continuity both with Goldman's (and others') observation criteria and with the notion of observation as an action too; not to mention common sense, of course.

As a matter of fact, after agreeing with Sorensen on the existence of only two alternatives in the eclipse riddle (either the agent sees Near or she sees Far), I have initially shown that many of the arguments he has put forward in order to defend his claim that what one sees in such a circumstance is actually planet Far are also compatible with the alternative conclusion that Near is in fact the real object of the perception. The amount of information extracted from the observation, the amount of darkness of the seen disk, the resemblance (to the object) case are not arguments against the common sense judgement that what the agent sees during a double eclipse is planet Near. Therefore, they are not evidence in favor of Sorensen's thesis either.

On the other hand, other arguments – which are not dealt with in his book but that are quite imperative in talks about perception, such as its phenomenological aspect and what exactly is the object of a successful perceptual discrimination, along with a discussion on observation as an action – suggest that what has just been called "the common sense judgement" should be favored over Sorensen's conclusion.

But an argument that, if I am not wrong, is probably fatal for the claim that the agent sees planet Far and not planet Near in a double eclipse situation is the one I called "the astronomical paradox". In the section devoted to this topic, I presented a *Gedankenexperiment* in which a contradiction seems to arise if one wants to endorse a Sorensenian position, since in this case the image of the fictional satellite Moon*'s absorptive surface should travel faster than light, while, according to Einstein's theory of relativity, no signal can.

No paradox arises, instead, if one endorses the common sense judgement that what the agent sees is the surface which is facing Earth*. Being so, in the successive section I have tried to show that Near can be considered the object of a successful perceptual discrimination even in the light of Goldman's (and others') observation criteria and of the notion of observation as an action. These are in total continuity with common sense, of course. And with the causal theory of perception, too.

Hence my conclusion, that in the double eclipse situation depicted in *Seeing Dark Things* what the agent sees is planet Near and not planet Far.

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