

What Should The Externalist Say Is Missing From Dream Experience?*

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There's much disagreement between philosophers over what it's like to dream. Descartes suggestively says “there are no definitive signs by which to distinguish being awake from being asleep” (1641, 60). More recently, Melanie Rosen (2018a, 307): “There are examples of vivid, highly detailed imagery in dreams, and it is likely that any particular *type* of phenomenally conscious experience can be simulated, both in lucid and non-lucid dreams.” The other side has it that normal waking perceptual and dream phenomenology are quite different. John Austin (1962, 42) wrote “we all know that dreams are *throughout unlike* waking experiences”. Alva Noë (2004, 214): “Dream sequences tend to be poor in detail, and what detail there is tends to vary unstably across scenes.” It's no coincidence that Descartes and Rosen are phenomenal internalists, while Austin and Noë are externalists. If the phenomenal character of any waking perceptual experience can be, at least in principle, reproduced in a dream experience, then externalism is in trouble (see Rosen 2018a, 310; Windt 2018, 2581).

On the flip side, if phenomenal externalism is true, then there must be some aspect of (at least some) normal waking perceptual experiences which isn't reproducible in a dream—assuming dreams are envatted states which fail to engage the outside world. This difference might be introspectable, or it might not. Noë has suggested both: (1) richness and stability (an introspectable aspect; see above and also Noë 2006, 431), and (2) not only a feeling of presence, but the actual presence of the experienced objects (a nonintrospectable aspect; see Noë 2007, 471).

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An internalist would be little moved to find out that factors outside the skin can affect phenomenology in ways that aren't at least in-principle introspectable (e.g., Schellenberg 2011, 739). So let's focus on the introspectable differences.

If Noë's point is simply that dreams are *usually* detail-sparse and unstable, that's not enough. If it's that dreams are *necessarily* detail-sparse and unstable, he seems to be wrong; as Rosen points out (2018a, 304), lucid dreams and false awakenings are cases of richly detailed, stable dreams. In this paper I'm going to suggest a fix for Noë. If you're an externalist like him, what you should say is found in waking phenomenology but not reproducible in a dream is (what I'll call) completeness. On a first pass, an experience is complete when there is no missing detail. I'll give a more precise definition below. At the end I will suggest how identifying this as the potential differentiator between waking and dream experience allows us to empirically test externalism.

Let's start with the basics. There are a number of nonequivalent ways to define 'internalism' and 'externalism' and no one way which adequately captures every position under those names (see Gertler 2012). The debate introduced above is over *phenomenal neural externalism*. These externalists hold that factors outside the nervous system can affect the phenomenology of experience (Windt 2018, 2581). The most well known variety of this externalism is *enactivism*. Enactivists like Noë hold that perceptual experience emerges out of our sensorimotor exploration of the world, and thus that tokening perceptual experiences requires this world-involving interaction and that perceived objects have an impact on phenomenology (e.g., Varela et al. 1991; Noë 2004; Johnston 2011; Hutto and Myin 2013; Hellie 2014). Internalists hold that fixing the neural activity within the skin fixes experience (e.g., Prinz 2006; Revonsuo 2006; Clark 2012; Rosen 2018a).

Next we need to get straight on the problem raised by dreams. As Jennifer Windt describes it (2018, 2581), "Because the disagreement" between internalist and externalist "is about the metaphysically necessary and sufficient conditions for wake-like experience, all that is needed for the internalist is that dreaming can in principle replicate the phenomenology of perceptual experience." She continues: "the externalist needs to show that dreaming can never, even in principle, replicate the phenomenology of waking experience". Rosen, in her critique of Noë, says similarly that externalism requires that "dream states *never* replicate waking experience" (2018a, 310). But what exactly is meant by "replicate waking experience" or "replicate the phenomenology of perceptual experience"? (I assume that these phrases come to same thing and that Rosen and Windt, like myself, are using 'experience' and 'phenomenology' interchangeably.) These phrases are ambiguous.

For example, when Windt says that the internalist need only show that dreaming

can in principle replicate the the phenomenology of perceptual experience, which of the following (if any) is it that they need only show?

1. For any token waking perceptual experience E, it is possible to have a dream experience E* with the exact same phenomenal character as E.
2. For any typical token waking experience E with phenomenal character P, it is possible to have a dream experience E* with phenomenal character P* such that P and P* match in some respects.
3. It's at least possible to have a token dream experience E with phenomenal character P such that some aspects of P are found in some typical waking perceptual experiences.

These three options aren't systematic or exhaustive; they merely demonstrate the wide range left open. All might be colloquially shortened to "dreaming can replicate waking phenomenology", but none are materially equivalent.

I suspect that there's not actually enough homogeneity between enactivist accounts, let alone externalists, to nail down a single interpretation which, if shown by the internalist, would falsify enactivism. For example, on particularly strong readings of Noë's view (which he himself suggests at spots but doesn't hold), the occurrence of any sensory experience at all without the corresponding sensorimotor exploration is impossible; so pretty much any sensory experience in dreams is a problem whether or not it "replicates" waking phenomenology (see [Clark 2012](#), 765). At the other extreme, if you're an externalist who thinks, like Heather Logue suggests ([2012](#), 218), that both factors outside the skin and the internal condition of the nervous system affect phenomenology, then all that's entailed by your view is that perceptual experiences generated by on-line sensorimotor exploration will have phenomenal aspects not replicable in a dream. In that case the internalist has to show:

4. Every aspect of the phenomenal character of every token waking perceptual experience E is repeatable in some possible dream experience E*.

If not, then the externalist can simply point to that missing aspect as the contribution of the external factors to phenomenology. While (4) isn't quite as strong as (1), it's still very strong.

Noë's focus on detail and stability suggest he has this interpretation in mind. His claim is that the aspect of waking phenomenology not replicable in a dream is the richness and stability of detail. This is what's contributed by the external factors

generating the experience. He also has an explanation of why external factors are needed for detail-richness and stability:

Perhaps this is explained by the fact that, as a neuroscientific matter, the brain is not very good at storing detailed representations of scenes. In normal perception, there is no need to store detail, since the world is available to serve as a repository of information about itself. This suggests a hypothesis: Dream states are unstable and poor in detail precisely because dream states, unlike normal, non-dream perceptual states, *are* produced by neural activity alone. ... The stability of normal experience is explained by the involvement of the world in our experience. (Noë 2004, 214)

Unfortunately, there are two problems with this suggestion.

First, as Andy Clark explains (2012, 765), there are good internalist explanations for the purported disparity in detail and stability. Clark takes a predictive processing approach to sensory experience (see Clark 2013; see also Hobson and Friston 2014) on which sensory experiences—whether while dreaming or during waking sensory exploration—are generated by the brain’s attempts to model incoming sensory signals. On this view, rich and stable experiences don’t arise while dreaming not because such experiences supervene on, or emerge out of, engagement with the stable details in the world, but because the brain will only generate a stable world model with rich detail when constrained by the sensory input of sensorimotor exploration.¹ Second, as already mentioned, it seems that at least some dreams are, in fact, richly detailed and stable. Rosen makes this point by pointing to at least some lucid dream reports and the phenomena of false awakenings (Rosen 2018a, 304; see also Rosen 2018b).

Actually, Clark’s point shows that the internalist doesn’t quite need to show (4); they need only show the slightly weaker:

- 4*. Every aspect of the phenomenal character of every token waking perceptual experience E is repeatable in some possible dream experience E*, or any unrepeatable aspects can be explained by some bit of neural activity generating E which is unrepeatable in a possible dream.

Noë’s brand of externalism needs (4*) to be false. So it needs to show:

¹Rosen (2018a, 300–301) provides a more subtle and empirically complete discussion of the issue. Clark’s suggestion falls short in several respects, but the details won’t matter here.

Phenomenal Signature: There is some aspect of the phenomenal character of at least some token waking perceptual experience E which is not repeatable in any possible dream experience E* and which can't be explained by some bit of neural activity generating E which is not repeatable in a possible dream.

Call this needed aspect the *phenomenal signature* of waking perceptual experience. Not every waking perceptual experience needs to have this signature, but at least some do if Noë's brand of externalism is true.

I take it that Clark and Rosen are correct. The phenomenal signature of waking perceptual experience isn't detail-richness and stability. Still, I think Noë is on to something workable and that his motivations are sound. The phenomenal signature has something to do with detail-richness (although perhaps nothing to do with stability); that signature is what I above called completeness.

Before elaborating, two caveats. First, for simplicity I'm assuming that dreams are "envatted", in the sense that they aren't generated by on-line sensory interaction with the environment. This assumption is not quite true, as Windt (2018) and Rosen (2018a) discuss. But if dreams are not envatted, things are all the better for externalist, since the external factors affecting waking experience might affect dreams as well and explain the similarity. Second, there might be room for the externalist to accept something even as strong as (4*). Depending on the details of their account, they might locate the difference-making external factors in the past. The dreams of a subject who spends their waking life in sensorimotor exploration of the world can replicate waking phenomenology (however that's understood), but only because that subject made sensory contact in the past with the world (Noë 2007, 472 hints at this reply; Rosen 2018a considers it in more detail). I think the externalist should pursue this idea, but I'll set it aside. Again, it only makes it easier for the externalist to defend their position.

A few more preliminaries. First, I am assuming, like the others in this debate, that dreams do involve *sensory* experiences, as opposed to experiences more akin to mental imagery (e.g., Ichikawa 2009). As with the previous two caveats, if not, things are only easier for the externalist. As Windt notes (2010), this view is well supported by the empirical literature. It's also not clear that the distinction is a fundamental one anyway (2010, footnote 1). When we dream we have sensory-like experiences of ourselves as an embodied subject immersed in a 3D environment (Windt 2010).

Second, philosophers and scientists studying dream phenomenology have to reply on their own introspection and the introspective reports of others (usually in

the form of dream diaries or surveys). Like others in this debate, I assume that these reports are reliable enough to use as data (see [Windt 2013](#)). Based on these reports a number of themes arise. You are likely familiar with them from your own dreams, but they are oft-noted in the empirical literature as well.

Theme 1: Dreams reproduce much of the content of waking perceptual experience. For example, in dreams you might be aware of both low-level features like colors, edges, shapes, pitches, and bodily sensations, as well as high-level objects like teeth, people, and windows ([Nir and Tononi 2010](#), 89).

Theme 2: Dreams are often bizarre, narratively weird, or unstable: the background might fade in and out, observed features like colors or shapes might transform before your eyes, the scene might suddenly shift, or you might experience impossible confluences like a deep blue face that's also somehow flesh-toned ([Hobson et al. 2000](#), 799; [LaBerge and DeGracia 2000](#), 287, 291; [Nir and Tononi 2010](#), 90).

Theme 3: Variable freedom of action: in some dreams one struggles to speak or move, while in others you have the freedom to fly ([Windt 2018](#), 2584, 2609).

Theme 4: Variation in detail and vividness: some dreams are missing many details like color or involve only dull color ([Schwitzgebel 2003](#); [Schwartz and Maquet 2002](#), 29), while others involve experience of rich, super-saturated color and other fine detail.

As Windt notes ([2010](#), 296), there is substantial interpersonal and intrapersonal variation in dream phenomenology. Content varies, of course (theme 1), but so does the degree of bizarreness (theme 2), bodily experience (theme 3), and level of detail and vividness (theme 4). Some dreams involve few or no bizarre elements, others many (see [Rosen 2018b](#)). Lucid dreamers report wide variation in detail and vividness, ranging from being more sparse and dull than waking experience to surreal levels ([LaBerge and DeGracia 2000](#), 285). Still, it does seem that on average dreams are less detailed than waking life ([Kahan and LaBerge 2011](#)). It's this wide variation which makes it hard to identify a phenomenal signature. Even if on average dreams are bizarre and detail-sparse, there are still ones which do a fairly good job replicating waking experience (in some loose sense).

Let's return to identifying a phenomenal signature. To start we need to make the notion of "detail" more rigorous. In a typical perceptual experience you're aware of some object (e.g., a cup); that object has parts (e.g., its handle) and features (e.g., its shape). Let's say that the more parts and features you're aware of,

the more detailed the experience. Say that an experience of an object is *complete* in a modality M iff it involves awareness of every nonoccluded part and feature of the object that's perceptible in M. For example, to be visually complete your experience of a cup doesn't have to involve awareness of its back side (that's occluded) or scratches too fine for your visual system to resolve (those aren't visually perceptible).

It's worth noting that in normal waking perceptual experience not every object experienced is experienced completely. For example, we lack experience of colors in the periphery (Noë 2004, 49), and so anything in that part of your visual field will be incompletely experienced. More generally, overall visual experience seems to be a mix of highly detailed experiences of objects at the center of attention and much less complete experiences of peripheral objects (Cohen et al. 2016). Are any waking perceptual experiences complete? It's plausible. Note that incompleteness should be in-principle introspectable. If you lacked awareness of a perceptible part or feature as you looked at a cup (e.g., its handle or its color at a spot), you should be able to notice the missing detail. When you engage in sustained sensorimotor exploration of an object (e.g., focusing attention on it, looking it over carefully, manipulating it with your hands, etc), you're in a good position to notice missing details, but don't. So these experiences are plausibly complete.

This, anyway, is what the enactivist should say, since it's also plausible that no dream experiences are complete. As Rosen points out, some dream experiences (false awakenings and some lucid dreams) may be richly detailed, but richly detailed does not imply completeness. The oft-reported difficulty people have reading text in dreams suggests that their dreams aren't as detailed as they think (see LaBerge and DeGracia 2000, 293; see also Noë 2006, 431). Many people report that in dreams they see text (on a sign or a piece of paper) which looks clear, but when they try to read it they discover that they cannot. This would be nicely explained by positing that their experiences of the text are incomplete. They have an experience of the text, but don't experience the fine details, such as the edges defining the letter shapes. When they aren't trying to read the text they take their experience of the text for granted and don't notice the missing components, but do notice the missing components once they try to read.²

In a similar way, difficulty understanding speech in dreams is sometimes reported (LaBerge and DeGracia 2000, 293). This difficulty could be explained by

²As Rosen points out (2018a, 306) in response to this point by Noë, it's true that in some clinical cases waking subjects experience unstable text that's hard to read. But I don't see a reason why this poses a problem for the view I'm developing here.

assuming the auditory experience of the speech is incomplete. Perhaps you have an experience of speech, or even an experience of particular words being said, but don't experience the relevant low-level parts of the speech, like the individual phonemes. So you can understand the speech if you have experiences of particular words, but if you merely experience the noise as speech and try to focus on the words, you find there's no actual sounds to focus on. The idea in both the case of text and speech is that the incompleteness of dreams doesn't come out until you try to focus attention, as you might do if you want to read some text or listen to what someone is saying. Focusing on details (not just text or speech) in general is something that's reported to be difficult in dreams ([Nir and Tononi 2010](#), 97).

Admittedly, this argument faces the same problem as before: just because text and speech are typically hard to extract in a dream doesn't mean they always are. Still, the examples are suggestive for the enactivist: when we engage in dreams in the kind of sensorimotor exploration which opens us up to complete experiences while awake, we find ourselves coming up short of a complete experience. Following up on Noë's suggestion quoted above, this is because the detail in a complete experience outstrips our brain's ability to simulate the world. The point is that if the enactivist is looking for a viable candidate for the phenomenal signature of waking perceptual experience, they should go with completeness. It's not implausible, it accommodates the point that some dreams are richly detailed, and it fits with the initial motivation that experiential detail outstrips the brain's encoding abilities. So while I haven't established that completeness is the phenomenal signature, it's the enactivist's best shot.

There is a final issue. Assume that at least some perceptual experiences are complete, but no dream experiences are. As Clark's above point makes clear, to establish that completeness is the phenomenal signature of perceptual experience we need to show that the incompleteness of dream experiences can't be explained by some bit of neural activity generating the complete waking experiences which isn't repeatable (for whatever reason) in a possible dream. This is in large part an empirical question. We have to show that the completeness is due to some factor outside the skin. Rosen makes this point. Referring to Noë's suggestion that rich detail and stability require interaction with the world, she says:

It would be impossible to test this theory unless there are some dream experiences which have similar brain activity to waking, [sic] allowing for comparisons. If we are incapable of producing detailed phenomenology despite similar neural activation, this would [sic] support Noë's claim. ([Rosen 2018a](#), 301)

While Rosen's second point is correct, the first is not. We don't need dream and waking experiences with similar neural activity; we need to look at the *differences* in neural activity between the two cases and ask whether they plausibly explain the phenomenal differences. If there are no neural differences which would explain why waking but not dream experiences could be complete, that's good evidence that completeness is the phenomenal signature we're after and that enactivism is true.

Are there neural differences which might explain why waking but not dream experiences can be complete? That question is beyond the scope of this paper. Comparative neurobiology-phenomenology is now a mainstay of dream research for both philosophers like Windt and Rosen and scientists (e.g., [Hobson et al. 2000](#); [Schwartz and Maquet 2002](#); [Nir and Tononi 2010](#)). So far as I know, no one has yet looked at whether the known neurobiological differences might explain the incompleteness of dreams, or even their variable level of detail and vividness. Recent work by Tomoyasu Horikawa and Yukiyasu Kamitani on decoding dream content from brain scans might be one promising path forward on this question (see [Horikawa et al. 2013](#); [Horikawa and Kamitani 2017](#)). Although current methods surely lack the needed sensitivity, the basic idea is that if this sort of decoding reveals the same level of information content in scans from dreams as in scans from waking experience, then that would suggest we won't be able to explain the incompleteness of dreams in terms of neural differences.

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