**Dreaming, Phenomenal Character, and Acquaintance**

*Abstract:*

Dreams are often defined as sleeping experiences with phenomenal character similar to, and perhaps sometimes indistinguishable from, the phenomenal character of perceptions of the real world. But they do not involve a relation of acquaintance to anything outside the mind. Hence they pose a prima facie challenge to accounts of phenomenal character in terms of acquaintance relations. One response is disjunctivist: to give a different account of their phenomenal character from that of successful perceivings. I argue that this weakens the explanatory value of the acquaintance account of the phenomenal character of successful perceivings. Another response is to deny that dreaming has phenomenal character at all: there is then no need to give an alternative to the acquaintance account of phenomenal character. I present an alternative model of dreams which has this consequence and argue that in the face of the alternative model, we lack theory neutral evidence of the phenomenal character of dreams and thus it is legitimate to choose between theories of dreaming on the basis of their fit with our best theory of the phenomenal character of successful perceivings, namely acquaintance.

1. Naïve Realism, Acquaintance, and Phenomenal Character

Naïve realism about perception is the view that – when all is going well[[1]](#footnote-1) – perception directly *acquaints* us with objects in the *external* world. It is usually thought to deserve the title ‘naïve’ because it says that perception is – at least when all is going well – just how it seems to the non-philosophical subject. It is a form of realism because it claims that the objects we are acquainted with in perception are not mental, are not within the perceiver’s mind, but exist outwith the subject.

That naïve realism actually captures the ‘non-philosophical’ view of perception can be, and has been, challenged. For example, Dummett (1979, 24-9) has argued that an ordinary perceiver would notice various effects of perspective and observation conditions which would lead her to realize that we are not directly acquainted with the external world but that our perceptual experience, that is *how* we perceive the environment,[[2]](#footnote-2) is the causal product of many factors. Thus the non-philosophical view is not that we are simply acquainted with reality in perception. Furthermore, most phenomenological arguments for naïve realism work by inviting philosophically sophisticated subjects to engage in careful introspection (Martin 2002). It does not seem that acquaintance accounts are usefully called ‘naïve’ and it would be better to reserve the title for the Berkeley-Hume view that in all cases things are as they seem and seem as they are, not in virtue of the controversial claim that this captures commonsense (on that question Berkeley and Hume disagreed), but in virtue of its rejection of the first step in construction of a theory of perception, namely the appearance-reality distinction. Such a genuinely ‘naïve’ view of perception would not be able to make sense of the concept of a veridical or correct perception because there would be nothing on the subject-side of the occurrence of perceiving which could be said to line up correctly with the world. There would remain a question whether such an account of perception could be a form of realism, whether it could be consistent with regarding these things that seem as they are and are as they seem to be external to the mind, and this is also something that Berkeley and Hume disagreed upon.

Instead of following Berkeley and Hume, contemporary naïve realists accept an appearance-reality distinction, but not in all cases of perceptual experience. Thus in good cases – when all is going well – the appearance just is reality, or perhaps we should say, reality is what appears to the subject. That is acquaintance. But in bad cases, cases such as illusions or hallucinations where our perceptual experiences, how we perceive the world to be, do not match up with reality, contemporary naïve realists offer a distinction between appearance and reality. Thus the class of perceptual experiences is divided in two for the purposes of explanation: in the good cases, how things seem to us is explained by how they are; but in the bad cases, how they seem needs a different explanation. This view is now standardly called ‘disjunctivism’ (Hinton 1967, Martin 2004, Fish 2009).

Many disjunctivists regard their biggest challenge to be the ‘screening-off argument’ (e.g. Martin 2004, 2006, Farkas 2006 ):

1. For every good case, there is a possible bad case with the same proximal cause and the same phenomenal character of experience.
2. In the bad case, that proximal cause is a sufficient explanation of the phenomenal character.
3. So in the good case where the same proximal cause is present, that is a sufficient explanation of the phenomenal character.
4. So in the good case, the object with which we are allegedly acquainted, being a distal cause, plays no role in explaining the phenomenal character.

The disjunctivist typically blocks this argument by rejecting premise (i), and there are many ways to do that but most turn upon denying that the bad case has the same, rather than merely indistinguishable, phenomenal character. Rather than discuss these attempts, I want to note that the force of the argument in the first place relied upon the disjunctivist accepting that her view is an attempt to give an explanation of phenomenal character in the good case by reference to the external object with which we are acquainted. If the disjunctivist was not interested in explaining phenomenal character by acquaintance, the argument would not be an objection to her view. Thus the seriousness with which a disjunctivist takes the screening off argument is an indicator of the value she places upon explaining phenomenal character by acquaintance.

2. Merely successful vs. good explanations

Rather than respond to the screening-off argument directly,[[3]](#footnote-3) I want to raise a slightly different question, which is whether acquaintance is a *good* explanation of phenomenal character. I do not want to cast doubt on the thought that acquaintance succeeds in explaining phenomenal character, or is at least an essential element of a successful explanation of phenomenal character, in the good cases. Rather I want to ask about the *value* of this explanation. How can there be successful explanations which are not good explanations? One example might be an explanation which invokes a particular feature of the situation when in fact explanation by reference to a more general kind which that feature instantiated would also be possible. For example, an explanation of a large harvest which referred to the high spring rainfall might be successful, but it is less valuable than one which referred instead to the amount of water the plants received, since the method of delivery of that water was irrelevant and it would be possible to replicate the effect artificially.[[4]](#footnote-4) Another example would be an explanation which made little progress with the larger explanatory project. For example, if we are seeking to explain a famine and we discover the crop failed in one village because a corrupt supplier had sold them sterile seeds, then while that is a successful explanation of that crop failure, it does not help us explain the general famine, especially if we think the corruption was localized. A third example might be the successful explanation of a trivial matter. For an example here, we might consider the explanation of why the seeds in the failed crops were sown in the furrow by someone walking from north to south (perhaps the seed store was north of the field).

Returning to the explanation of the phenomenal character of perception by reference to acquaintance, there are three reasons one might doubt that this explanation is of much value, each corresponding to the three examples just given:

1. The similarity of phenomenal character in the good and bad cases suggests that a deeper explanation would unify the two.
2. If good cases are relatively uncommon, then the bulk of the explanatory work for a theory of consciousness is still to be done.
3. If good cases are relatively uncommon, then acquaintance is not a part of our subjective mental lives which we place a high value on as subjects.

Considering (i), the disjunctivist might point out that it is entirely possible that no deeper explanation will be forthcoming, and this seems to underlie the assertion many make that disjunctivism is a claim about fundamental metaphysical kinds (Martin 2000, Snowden 2005). For if the good and the bad cases of perceiving are of different fundamental kinds, then there would be good reason to doubt a deeper explanation will be forthcoming. But this approach requires considerable self-confidence with respect to metaphysics: a more humble approach might think that our natural kinds are tentative at best until we have done the explanatory work. Anyone who insisted that trees and bushes were of different fundamental kinds would now look ridiculous, and someone who insisted that we could classify whales as fish without knowing how they reproduced would be operating with a pre-modern biology. Thus the explanatory question and the question of fundamental kinds go together and the disjunctivist’s closing off of the possibility of a deeper explanation looks like a weakness of the account.

Considering (ii), the disjunctivist might argue that even if the good cases are uncommon, they are explanatorily and metaphysically prior: there could only be bad cases because there are good cases and the character of those bad cases depends upon the character of the correlative good cases. While it is certainly not disjunctivist, the classical empiricist account of imagination has this form: Hume tells us that we can only form the idea of a golden mountain by perceiving gold and perceiving mountains and (somehow) combining the memories or copies of these perceptions, so the perceptions are explanatorily and metaphysically prior to the imaginings. If the disjunctivist’s account of the bad cases has a structure somewhat like this, then they may argue that (ii) is not such a weakness after all. However, that is to slightly misread the point. It remains the case that the bulk of the explanatory work is not done by acquaintance but by whatever mechanism is in place to create phenomenal character in the absence of acquaintance, even if that mechanism requires prior acquaintance. In Hume’s theory, for example, what does the bulk of the explanatory work is the mysterious process by which impressions are ‘copied’ into ideas which have similar phenomenal character and then those ideas are stored – non-phenomenally – to be mysteriously reactivated in consciousness when we try to imagine the golden mountain.

Finally, turning to (iii), the disjunctivist might argue that uncommon experiences might still be of great subjective value. For example, if we are stuck in the Matrix but very occasionally ‘let out’ to be re-acquainted with friends, lovers or favourite foods, then we might place a very high value on those infrequent moments of acquaintance.[[5]](#footnote-5) But for that to apply to our actual situation, it would have to be the case that when our attention is drawn to how uncommon the good cases are, we align our values with the good cases rather than some mix of good and bad. It is far from obvious that this will happen, just as it is very hard to pin down exactly what is so bad about living in the Matrix (Pryor, 2005) or to persuade someone to change their mind about Nozick’s Experience Machine. Furthermore, there remains the fact that insofar as we place a high value on any so-called ‘bad experience’ – such as a wonderful dream – then acquaintance cannot explain what it is about that experience which we find so valuable.

(i)- (iii) are not being offered as an *objection* to disjunctivism, but as a motivation for the thought that what the disjuntivist has to say about bad cases affects not the success of her explanation of phenomenal character in the good cases but the *value* of that explanation. If we think that acquaintance is a good explanation of phenomenal character in the cases where we can use it, then we should take seriously the challenges posed by (i) – (iii), for if we can deal with them, then we have made that good explanation even more valuable.

It is possible to give a bite-sized example of how this might work. One ‘bad case’ which the disjunctivist has to deal with is negative after-images: these occur when you fixate on a bright, predominantly single coloured object for approximately 30 seconds and then, upon looking at a pale surface immediately afterwards, experience a colour patch of the opposite colour, apparently floating above the surface of the perceived objects and moving with your direction of gaze. Can we explain this by acquaintance? Most contemporary naïve realists will be inclined to say not, for when I turn my eyes from the green screen to the white paper and see a magenta patch, there is no magenta for me to be acquainted with.[[6]](#footnote-6) Consequently, the phenomenal character of this experience needs to be explained, and typically it will be explained as created by the over-stimulation of the photo-receptors. But if over-stimulation of photo-receptors is sufficient to create phenomenal character, and if disjunctivists are also tempted to say that under-stimulation of the same photo-receptors causes ‘brain grey’ experiences, then the explanation of the good case by reference to acquaintance looks like a very special case where the photo-receptors have just the right level of stimulation. Objection (ii) is pressing.

An alternative approach to after-images would be to propose that the over-stimulation of the photo-receptors causes an insensitivity to light of certain wavelengths (Stoneham 2012). If staring at the green screen causes an insensitivity to green light, then if I look at a source reflecting or emitting predominantly white light, it will look magenta. Imagine looking at a piece of white paper in sunlight: there are three things we can do to make you see magenta. First, we could filter the sunlight with a magenta filter which will block the green part of the spectrum. Secondly, we could colour the paper magenta, which will prevent it reflecting light in the green part of the spectrum. Thirdly, we could make the eye less sensitive to green light, perhaps by over-stimulating the photo-receptors for green light. All that differs between these three cases is where in the causal story the green light is removed from the process. In all three cases, the magenta was there before the filtering and the change merely makes it visible by blocking the green parts of the spectrum.

In the example of negative after-images, we have extended the explanation of phenomenal character by acquaintance to what appeared to the disjunctivist to be a ‘bad case’. Another approach would be to restrict the explananda. Consider the problem of ‘cognitive phenomenology’, which is the claim that ‘some cognitive states put one in phenomenal states for which no wholly sensory states suffice’ (Chudnoff 2015, 15). If we accept this and also that acquaintance is the preferred explanation for the phenomenal character of sensory states, then it seems we have a whole class of states with phenomenal character which cannot be explained by acquaintance, since they involve no acquaintance and do not depend upon the phenomenal character of acquaintance. The lack of unity makes objection (i) pressing. But the existence of cognitive phenomenology is contested, so if a contemporary naïve realist was in a position to plausibly deny that there is such a thing as cognitive phenomenology, that would, given objections (i) to (iii), make their explanation of the phenomenal character of perception a little bit better.

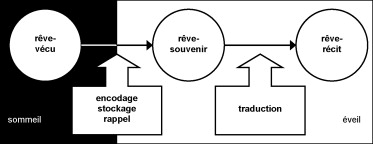
3. The standard model of dreaming

With these thoughts in mind, I turn to the question of dreams. Apparently most people dream at least 4-6 times per night and 95-99% of dreams are forgotten ‘for the very ordinary reason that we sleep right through them and aren't paying attention to remembering anything’.[[7]](#footnote-7) Quantitatively, then, dreams are a significant part of our mental lives. Furthermore, the dreams we do recall have significant value for many people: most people have strong positive and negative emotional responses to many of their dreams; many people enjoy telling their dreams; poets and painters draw upon them for inspiration; and to not dream at all, or at least to not remember any dreams, is seen as missing out on an important part of human life – so much so that pet-owners are very ready to project dreaming onto their animals. But it seems that acquaintance can play no role in the explanation of the phenomenal character of dreaming because when dreaming we are asleep and acquainted neither with the fantastical objects of our dreams nor even our mundane environment. Thus dreams present a significant problem for the disjunctivist.

The standard model of dreaming identifies a four stage process, with stages 1 and 2 happening during sleep but 3 and 4 during wakefulness:

1. Dream experiences
2. Encoding in memory
3. Recall from memory
4. Report

For example, we find this model used explicitly in neuroscientific research on dreaming:[[8]](#footnote-8)



F. Guénolé , A. Nicolas (2010, 194)

For clarity, let us call stage 1, the conscious experiences which happen during sleep, ‘dreaming’, and stage 4, the public report of a dream through some act of communication, whether directed at others or oneself, ‘dreams’. This distinction corresponds to David Foulkes’ distinction between Type-A and Type-B dreams:

* A-type dreams (= dreaming): ‘the involuntary conscious experience of mentation during sleep’
* B-type dreams (= dreams): ‘a person’s everyday account of an experience, described with greater or lesser accuracy and with greater or lesser conviction, as having occurred during sleep’ (1999, 35 and 36)

The standard model is almost universally accepted by both dreamers and dream researchers for three reasons. First, and most influentially, stage 3 feels like memory of prior experiences and if it is such a memory, then stages 1 and 2 must exist. Secondly, between stages 2 and 3 there is often an experience of awaking with a strong emotion and stage 3 sometimes – but not always – provides an explanation of that emotion in terms of a stage 1 experience. Thirdly, there seems no other way to explain the ubiquity of stage 4, namely dream reporting. However, the model is not subject to direct testing because there is no way to access dreaming apart from subjective reports based on apparent memory (cf. section 5 below).[[9]](#footnote-9)

The standard model has various problems. First, stage 1, the dreaming, is an entirely private experience. Not only are there good philosophical concerns about the intelligibility of such entirely private experiences, but this seems to require us to explain the content of dreams in terms of some internal process, be it the Freudian unconscious or a sub-personal tidying up of memories and emotions. None of those explanations succeed in explaining most, let alone all, of what is actually reported by subjects (Botman & Crovitz, 1989; Harlow & Roll, 1992; Hartmann, 1968; Marquardt, Bonato, & Hoffmann, 1996; Nielsen & Powell, 1992). Secondly, there are phenomena which do not fit into the standard model, such as precognitive dreams (e.g. Maury’s dream (Freud 1976, 87)) and time-compression in dreams which seem too long for the time spent asleep.[[10]](#footnote-10) Thirdly, while stage 3 feels like memory to the subject, it has many features which are different from memory of waking experiences, such as fading very quickly, being resistant to recollective effort and not being strengthened at second recall. There are many reported phenomena which feel like a cognitive ability which just cannot be (e.g. déjà vu, clairvoyance, mind-reading) and in such cases good science over-rides subjective conviction. Fourthly, large amounts of research have shown that episodic memory is notoriously unreliable and that false memories can be created at both the encoding and recall stage, with the prime determinants being the social and linguistic context in which the ‘recall’ is triggered (Loftus 1992, 1996, 1996; Hyman 1995; Kassin & Kiechel 1996; Rubin 1999). There is plenty of evidence that both lab-based and diary-based dream research is heavily affected by these factors which distort memory. And yet, despite all these problems, the standard model remains widely accepted simply because there is no plausible alternative.

Another feature of the standard model which is rarely commented upon, because so deeply embedded in our thinking about dreams, is how it attributes the responsibility for dream content. For much of recorded human history, it seems that dreams were regarded as either pathological or externally caused (‘visions’ with good or evil supernatural causes). Thus the natural response to disturbing dreams would be either ‘What is happening to me? Am I unwell?’ or ‘What will happen to me (or sometimes others)?’, and perhaps where the dream appeared to be a vision to do with other people, ‘Why have I been given this dream?’ But as the attraction of supernatural explanations waned, the mechanistic and physiological explanations seemed inadequate to capture the apparent meaning of dreams, the intellectual context was primed for Freud’s appeal to subconscious sources in the dreamer’s mind. The psychological character of this explanation, in terms of hidden desires, fears and urges, enabled dreams to have meaning and significance. But they also added an additional feature to the standard model: the content of stage 1, the dreaming, is determined by something internal to the subject. And even those dream researchers who reject Freud’s theory maintain this additional element and seek explanations for dream content within the dreamer’s psychology (e.g. theories of the function of dreams in terms of processing memories or problem-solving). This leads to extraordinary debates, such as whether O.J. Simpson’s dream of killing his wife was admissible evidence in his trial for murder.[[11]](#footnote-11) More generally, it can lead to anxiety, especially in adolescents, as dreamers subject to unpleasant dreams become concerned that this may reflect a hidden or suppressed truth about their personality.

4. Dreams without dreaming

Most of the problems with the standard model derive from the fact that it takes the content of stages 3 and 4, what is recalled and what is reported, to correlate with the content of the nocturnal dreaming experiences, stage 1: *dreams require there to have been correlated dreaming*. To find a plausible alternative, we must drop this assumption. The alternative I will explore has been proposed in various forms but is usually traced back to Goblot (1896), who responded to Maury’s dream by proposing that dreams are made up very quickly while we are waking up. Using my terminology, we can say that this is a version of a general position that there we have *dreams without dreaming*. While Goblot’s proposal may work for the specific case of a dream report which appears to be prompted by an event immediately prior to wakening, we need a more general account to explain dream recollection and reporting as a widespread phenomenon.

Consider the fact that since at least the time of Galen (130-210 CE), who thought that eating cabbage gave us especially bad dreams,[[12]](#footnote-12) people have believed that there are correlations between what you dream and what you eat. How could a food cause dreaming with a certain type of content? What mechanism could relate eating cabbage or cheese to reporting bad dreams? Notice how different this is from the claim that traumatic experiences cause bad dreams – there the mechanism isn’t quite so magical because it appears to be mediated by an intelligible cognitive process (Domhoff, 1996; Hartmann, 1998; Kramer, 2000; Zadra, 1996): if dream content is partially caused by your psychological state prior to and during sleep, then that appears to be an example of a familiar causal pathway, namely one psychological state caused by another and the fact that the effect occurs during sleep has no particular significance. We also have familiar ingestion-to-psychological-effect causal pathways with psychotropic substances, but these do not apply here because neither cabbage nor cheese appear to be psychotropic.[[13]](#footnote-13) And to suggest that these foods are in fact psychotropic but that they only affect the sleeping mind – perhaps only the REM-sleeping mind – is no explanation until we have a mechanism by which the psychotropic effects could be sensitive to the sleeping state of the subject. So the long-established correlation between what you eat and what you dream is, if true, puzzling on the standard model.

The solution to the puzzle is surely that certain food types can cause digestive discomfort, which causes familiar, unpleasant bodily sensations. But how would an unpleasant bodily sensation cause dreaming experiences of bad things? Perhaps it could be incorporated into the dream in the way that perceptions of external events such as loud noises are sometimes incorporated into dreams. However, then we would expect the bad dreams caused by food to always involve the stomach – which they don’t. So on the standard model we seem to have a process like this:

bodily sensation

|

Digestion **->** dreaming **->** encoded in memory **->** recalled **->** dream report,

with no apparent correlation between the content of the dreaming and the bodily sensation, but then strong correlations between the content of the dreaming and what is recalled and reported. This is an inadequate explanation because while there it is only a weak correlation between the bodily sensation and the dream content, there is some: unpleasant bodily sensations like indigestion produce unpleasant dreams. How are we to explain that? After all, diurnal indigestion has no such effects. By recognizing the role of physiological processes in dream formation, this variant on the standard model gets a partial explanation of the phenomenon, but there is more work to be done.

Here is an alternative: (1) the encoding in memory of the bodily sensation of indigestion – a sensation which has a phenomenal character explained by treating interoception as a form of acquaintance with the body – is distorted by the fact that you are asleep at the time and not good at recognising bodily sensations for what they are; (2) the recollection of that sensation is distorted by the fact that either it occurs during the process of awakening when cognitive functions are again disturbed, or it occurs in response to a deliberate prompt or involuntary cue to recall a dream, when social and cultural factors affect recall; (3) the dream report – whether public or part of an internal stream of conscious thought – nearly always occurs in a social and cultural context[[14]](#footnote-14) in which there are conventions about what sort of dreams one might have, what those might say about you, and to whom it is appropriate to report dreams of different types (e.g. we expect phenomena such as a character in a dream being X but looking like Y). So the bodily sensation of indigestion is the cause of the dream report, but the content of that report is explained by all the other factors that influence memory and reporting. The nocturnal discomfort, a form of acquaintance with your body, is causally responsible for a confused waking state which disposes subjects who have the concept of a dream to explain by confabulating a rich series of conscious perceptual experiences during their sleep. The content of the confabulation is only partially related to the actual nocturnal awareness (discomfort causes bad dreams) but filled out by cultural conventions, social expectations and of course how those apply to the individual context of the dreamer, which might vary from day to day. Thus we have dreams without dreaming.

This is just one particular kind of case, though one which is very common. When we take into account that nocturnal interoceptive and sensory experiences include not only indigestion, but also other bodily sensations such as warmth, coldness, stiffness, the touch of the sheets etc. and restricted perceptions of the environment, such as light-levels and noises, then we can find a huge range of initial causes for dreams, namely real perceptions of real things which are confused in the process of encoding and recall, subsequently feeding into a confabulatory process, which also draws upon a variety of psychological, social and cultural influences, of engaging in the phenomenon of dream reporting.[[15]](#footnote-15)

If you wonder how the cultural influences work, consider the phenomenon of oedipal dreams in pubescent males. For physiological reasons, pubescent males are particularly prone to nocturnal emissions and concomitant reports of erotic dreams.[[16]](#footnote-16) How does this come about? While asleep the young man have some awareness of physiological changes such as the erection and ejaculation; when he wakes he is confused for he has been asleep, alone and not masturbating; the concept of a dream – taught to him at a young age to help soothe the night terrors – provides a handy explanation; so he confabulates a sequence of experiences which would explain the ejaculation (were they real experiences, of course); this confabulation conforms to culturally expected norms, further embedding the problematic experience of nocturnal ejaculation into a familiar narrative. What norms might these be? Well, given the widespread Freudian idea that dreams are revelatory of suppressed desires, and the equally widespread belief that these include sexual desire for the mother (for famous example, one only needs to listen to David Bowie’s ‘Sister Midnight’ in which he recounts a series of dreams of ‘mother in my bed’), we could predict some oedipal confabulations as a response to nocturnal emissions.

On this model of dreams without dreaming, we do away with the postulation of large amounts of nocturnal experiences with vivid phenomenal character unexplainable by acquaintance with anything external to the subject. This is clearly of benefit to someone who wants to explain phenomenal character by reference to acquaintance, since acquaintance now explains much more of the data than it appeared to when we accepted the standard model of dreaming. But one might fear that by denying dreaming, we are implausibly denying something that is too central to our conscious mental lives to be denied.

However, it is a mistake to think that by denying that dreams correspond to nocturnal, conscious, non-perceptual experiences, i.e. that dream reports taken as reports of such experiences are even roughly accurate, we thereby recommend putting an end to dream reporting.[[17]](#footnote-17) On the contrary, this view keeps firmly in place the cultural importance of dreams: whatever first caused people to report having had vivid nocturnal experiences of unreal scenarios, and we can only speculate, it quickly caught on. Sometimes it is useful, such as when ‘it is only a dream’ soothes the infant’s night terrors; sometimes enjoyable; sometimes fascinating in a way we want to share; but it is never a window onto a lively but hidden mental world. This doesn’t mean that dreams are not revealing about you, but they are revealing about you in the way your jokes or choice of conversational topics are revealing about you: they say something about your personality, your cultural context, your social relations, your current concerns and generally what is holding your attention or worrying you at the moment. It doesn’t even hurt to continue falsely thinking of dreams as reports on largely accurate memories of nocturnal experiences, so long as you don’t build a psychological theory or therapeutic practice out of that.

In fact, all the main conclusions of large-scale content-analysis of dream reports would be predicted on the social-cultural model of dreams without dreaming (Domhoff, 2000):

First, dreaming [i.e. whatever causes dream reports] is a cognitive process that draws on memory schemas, episodic memories, and general knowledge to produce reasonable simulations of the real world (Antrobus, 1991; Foulkes, 1985; Foulkes, 1999), with due allowance for the occasional highly unusual or extremely memorable dream (Bulkeley, 1999; Hunt, 1989; Knudson & Minier, 1999; Kuiken & Sikora, 1993). Second, dreams have psychological meaning in the sense of coherency, correlations with other psychological variables, and correspondences with waking thought (Domhoff, 1996; Foulkes, 1985; Hall, 1953b). Third, the unusual features of dreams, such as unlikely juxtapositions, metamorphoses, and impossible acts, may be the product of figurative thought (Hall, 1953a; Lakoff, 1997).

5. Objections and replies

At this point I aim to have shown that there is a viable alternative to the standard model of dreaming, an alternative which should be attractive to anyone who wants to explain phenomenal character by reference to acquaintance with extra-mental items. But that falls short of showing the alternative model is correct.

The evidence we would need to decide between in favour of the standard model would be that there are conscious perceptual experiences during sleep which cannot be explained by acquaintance and which are remembered, sometimes inaccurately, in dream recall. And here we hit a problem: the normal evidence for conscious experiences is the subject’s report, whether verbal or via some behavioural response test, but in the case of dreaming there is no simultaneous subject report, only the later memory. Now in general we can take subjects’ memories of conscious experiences at face value, *pace* the normal issues about reliability of experiential memory, but in the case of dreaming we have a double problem: first, it is not possible to assess the general reliability of memories for dreaming by comparing reports against independent evidence of the dreaming because we have no other access to the dreaming;[[18]](#footnote-18) and second, we are seeking evidence to decide between two theories, one of which denies that dream reports are reports of memories (operations of the faculty of memory), however accurate or inaccurate. If what is at stake is whether someone is remembering or confabulating, we cannot decide the issue by appealing to what they ‘remember’.

(1) Earlier I referred to the assertion that we forget 95-99% of our dreaming. How is such a claim established if we only have the subjects’ memories to go upon for whether dreaming occurred? One method is to look at nocturnal neural activity prior to dream reports and to see how often similar activity occurs even though there is no subsequent report (e.g. Horikawa et al., 2013).

There are several problems with this. One is a general methodological issue with neuroscience: there are no non-arbitrary grounds (yet) to determine when two patterns of neural activity are sufficiently similar. Everything is similar to everything else in some respect and anything as complex as a working brain will be similar to another working brain in multiple respects. Just mining the terabytes of data a neuroimaging generates for specific patterns will produce false positives (Kilner 2013). Another is that the grounds for thinking this particular pattern of activity correlates with conscious experiences rests entirely on taking the dream report to be based on a largely accurate memory of such experiences.

The problems which affect this particular use of brain scanning data will affect any use of scanning techniques to determine that there are conscious experiences during sleep. Suppose the methodological issues were resolved and we had reliable data correlating patterns of neural activity with *waking* conscious experience. Could we then look at the sleeping brain to determine when it was having similar conscious experiences? This is the infamous and methodologically dubious ‘reverse inference’ (Poldrack 2006).

In general, it is hard not to be impressed by evidence that the brain is ‘doing the same thing’, in a context where we are trying to understand the psychological processes going on, as it is doing in a context where we have a reasonably good understanding of the psychology. Consequently we tend to infer from neural state A being associated with psychological function F in one context and the occurrence of A (or perhaps a similar A\*) in another context to the occurrence of F (or perhaps F\*) in that context. However, there are two significant problems with inferring in this way from the context of conscious perceiving to the context of dreaming. The first is that because the dreaming subject is asleep, we will not find exactly neural state A (typically there will be no alpha rhythm across the occipital lobe – though see (3) below for detailed discussion of sleep states) and so we will always be comparing similar states, A and A\*. That leaves the inference open to challenge that the states are not sufficiently similar and we should be particularly cautious of claims of similarity in the neuroscience literature based on scoring systems which are designed for different purposes. To classify A and A\* as being of the same type for the purpose of inferring psychological function will always be tentative until we have a complete understanding of the grounding of psychological function in the brain, and we are a long way from that. Furthermore, philosophical assumptions about that grounding relation are often brought into the typology without being defended or even made explicit.

The second is over the relation between the psychological functions. Someone who wishes to explain (some) cases of phenomenal character by reference to the subject being acquainted with the external world will regard the psychological function F in the conscious perceiving subject as something necessarily unattainable in the dreaming subject. Consequently the inference must be to a psychological function F\* which does not involve acquaintance, and it is thus an open question whether F\* does involve conscious experiences. This is not just a point about local supervenience. Of course any phenomenal character which is partially constituted by acquaintance will not be locally supervenient, but the inference we are considering is not to exactly the same psychological state but to an allegedly similar one. Rather the point is to do with the oddity of postulating quasi-perceptual conscious experiences in the sleeping subject given the background view that it is the operation of the senses that produce phenomenal consciousness. The point was made eloquently nearly a thousand years ago by Al-Ghazali:

If a man had no personal experience of dreaming and someone were to tell him: “There are some men who fall down unconscious as though they were dead, and their perception, hearing, and sight leave them, and they perceive what is ‘hidden,’” he would deny it and give apodeictic proof of its impossibility by saying: “The sensory powers are the causes of perception. Therefore one who does not perceive such things when his powers are present and functioning a fortiori will not perceive them when his powers are suspended. (1105, 110)

(2) It might be suggested that we do not need to appeal to neuroscience to find evidence of dreaming, whether it is remembered or not. For example, most people are convinced that dogs dream because they have seen sleeping dogs twitching and whimpering as if they were ‘chasing rabbits’. Similarly, many people sleep-talk and some sleep-walk.

It is worth carefully unpacking the inference here:

1. The evidence is some behaviour in sleeping subjects which is similar to some type of waking behaviour (though not necessarily one that occurs in the same subject – dogs who never chase anything while awake still twitch their legs in their sleep).
2. The waking behaviour, when it occurs, is explained by reference to a conscious, perceptual experience: the dog is running that way because she can see the rabbit.
3. The sleeping behaviour is similar enough to the waking behaviour for it to need a similar explanation.
4. Therefore, we postulate a conscious perceptual experience in the sleeping subject to explain the behavior, e.g. the dog is dreaming of chasing a rabbit.

It should be obvious that (iii) is problematic in many ways: it ignores the possibility of equifinality; it overestimates the similarity of the sleeping and waking behaviours;[[19]](#footnote-19) it assumes sleeping and waking subjects are both intentional agents whose behavior needs explaining by reference to conscious mental states. Let us concentrate on the third. Why think that a sleeping animal’s behaviours are susceptible to the same kinds of explanation as a waking one’s? It seems that we have tacitly assumed a kind of biological mechanism here, namely that the body is a machine subject to a single set of explanatory laws at all times. But when we consider animals less mechanistically, the states of sleeping and waking seem to mark precisely the sort of difference we might expect to be reflected in explanations of their behaviour. Perhaps, what a waking animal does is to be explained one way (with reference to conscious experiences and intentions) but a sleeping animal does not do things in the same sense and is thus not to have its behaviours explained in the same way. In particular, when a sleeping dog moves as if running, that will have an explanation relevant to the fact that it is asleep and precisely not having perceptions of rabbits. To explain it by a dream is to try to force the sleeping state into the framework for explaining waking behaviours – it is tempting but not obligatory.

The alternative model of dreaming fits well with a particular way of thinking about the relation between the sleeping and waking subject. It is easiest to explain this by a thought-experiment. Suppose some people occasionally went into a state of heightened awareness, call it ‘super-waking’, in which they could control their digestion in much the same way that we can control our breathing by intentionally holding our breath or panting. Further suppose that changes very much like the ones the super-awake bring about happen in the intestine of some people merely awake: we would not be in the slightest bit tempted to explain those changes by ‘hidden’ intentions but would instead treat them as purely physiological. But explaining the physical behaviours of sleeping subjects by postulating dreams is doing just that: it is taking something which is in the intentional control of a waking subject and postulating hidden experiences and intentions to explain it in the sleeping subject. Rather, when we find phenomena which occur in the sleeping subject and also under intentional control in the waking subject, we should see the waking occurrences as being susceptible of a different type of explanation, one in terms of perceptions and intentions, that is simply unavailable in explaining the sleeping occurrences.

(3) The appeal to these familiar sleeping behaviours looks promising evidence for the standard model because it appears to provide contemporaneous evidence of the dreaming. However, that evidence was not decisive because we were choosing to interpret the behaviours as under conscious control based on their similarity to waking behaviours. An ingenious experimental method invented by Stephen LaBerge (1980) gets around this problem by focusing on lucid dreamers. Lucid dreams occur when the subject becomes aware that they are dreaming. For most people who experience this, the awareness is followed by immediate wakening, but some subjects report that they sometimes continue dreaming in this lucid state. Furthermore, some expert lucid dreamers report being able to induce lucidity and even choose the dream scenario. LaBerge’s idea was that subject’s who were able to continue dreaming having attained lucidity might be able to signal that they were dreaming using a pre-arranged signal. Given that lucid dreams ‘are nearly exclusively found in REM’ sleep (LaBerge, 2000, 963) and most motor functions are paralysed in that sleep state, the signals were originally eye movements though later experiments looked at the onset of e.g. arm movements which had been inhibited. Using these signals, LaBerge was able to determine when these lucid dreams occurred, their duration (up to 50 minutes (LaBerge 1990, 129)) and even ask the subjects to perform tasks to assess their level of cognition, such as recalling keywords and where they were sleeping (Levitan & LaBerge, 1993).

The phenomenon of lucid dreaming itself is not evidence for the standard model because lucidity in dreams is still only a phenomenon reported on the basis of recollection of a nocturnal conscious experience, and thus no different from any other dream content. What is crucial in the LaBerge paradigm is that we have pre-arranged signals the interpretation of which does not depend upon a subsequent dream report nor upon parallels with waking behaviours. While it remains possible that the development of a suitable measurement scale will reveal that phenomena associated with lucidity are more common that usually thought (Voss et al, 2013), for present purposes it would seem that even a few cases of signaling by expert lucid dreamers would provide the crucial evidence for the standard model and present a problem for acquaintance accounts of phenomenal character.

Rather than try to pick apart particular experiments, I want to consider the experimental method more generally. The first thing to note is that the pre-arranged signal must have a determinate meaning. The most obvious one to start with is ‘I am now lucid dreaming’. Where the subject is able to not merely attain lucidity but also choose the dream scenario, a signal might mean ‘I am now lucid dreaming about X’. Finally, where a task to be performed during the dream had been agreed, a signal might mean ‘I have completed task Y’. However, simply agreeing a signal does not always succeed in giving that signal meaning: the agreement needs to take a certain form.

Assuming that in this case the subject does want to signal the event whenever it occurs, that is she has no desire to conceal information from the experimenter, then the agreement must be of the form ‘signal s IFF e is occurring’. Now consider the simple case where we are attempting to create a signal for the occurrence of the lucid dream state. Can the subject sincerely agree to signal s if and only if she is lucid dreaming? To agree to that she would have to believe that when lucid dreaming she will be able to signal s and when not lucid dreaming she will not ‘accidentally’ signal s. The second issue is addressed by choosing a signal which is very unlikely to happen during normal sleep, like a specific sequence of eye movements. The first is addressed by trials. But notice the structure the trial would have to take: the subject would sleep with the instruction of signaling when she is lucid dreaming, the signal would occur and the subject would be woken and asked if she was lucid dreaming. A strong correlation between the signal and the subsequent report would be evidence she has the ability to signal s if e is occurring. But now pressure is put onto our resolution of the second issue, namely whether she has signaled ‘accidentally’. Originally it looked sufficient for this to be the case that the signal be something which doesn’t normally occur in sleeping subjects. However, for the trail of her ability to signal when lucid dreaming to be convincing, it must be the case that the signal is unlikely to occur accidentally in a sleeping subject who has been primed to make that particular signal during that particular night of sleep. Which is to say that we only have the subject’s report as evidence that the signal was caused by the lucid dreaming.

The alternative explanation of the trial results is that she is primed to make the signal while asleep, on waking she has a memory of the act of making the signal, and – due to pressure to perform and perhaps a belief in the existence of lucid dreaming – confabulates a dream to explain the signaling. The problem we have with the LaBerge methodology is that the subject goes to sleep with the intention of performing a certain action only when lucid dreaming and what we know for sure is that she performs it when in REM sleep and reports a lucid dream, but that leaves open the question of whether she did what she intended to do, or whether there is some other explanation of what happened. The incredulous question ‘What else would explain why she did it?’ takes us back to the problem discussed in section 17, namely that alleged evidence for the standard model often presupposes that the explanation of waking behaviours in terms of conscious experiences and intentions should also be used to explain sleeping behaviours. It is precisely this desire to make the sleeping subject psychologically just like the waking subject – except that a few physiological functions are ‘turned off’ – which makes the standard model so attractive and which the alternative model is challenging.

That is not the end of the matter, however, because the self-identified expert lucid dreamers recruited for LaBerge’s experiments clearly have some unusual abilities on any theory of dreaming. In particular, they seem able to do things in their sleep which go beyond what the rest of us are able to do when asleep.[[20]](#footnote-20) What is in question is whether we have evidence for LaBerge’s interpretation of these abilities in terms of lucid dreaming. When considering this, it is worth remarking that LaBerge often takes his research to show that common assertions to the effect that self-reflection, meta-cognition, reasoning, recall of waking knowledge and volitional control are ‘greatly attenuated in dreams’ (Hobson et al, 2000, 799) are exaggerated. If his data does show that lucid dreamers exercise these competences, then that might just emphasise that these people have some very unusual abilities to perform complex behaviours while asleep.

However, we should be cautious about drawing these conclusions without investigating another aspect of the methodology of lab-based dream research, namely the operational definitions of sleep stages. Consider the American Academy of Sleep Medicine’s *Manual for the Scoring of Sleep and Associated Events* (Iber et al, 2007), which is the standard for scoring polysomnographic data. This defines five stages of sleep (2007, 24): Stage W (wakefulness), Stages N1-3 (non-REM sleep), and Stage R (REM sleep). What is striking is the comparison of the definitions of Stages W and R. For example, Stage W’s definition includes *exactly the same* eye movements as Stage R with the following observation:

‘While rapid eye movements are characteristic of stage R sleep, they may also be seen in wakefulness with eyes open when subjects scan the environment’ (2007, 25).

In fact, the crucial differences between stages W and R seem to be the presence of alpha rhythm and normal or high chin muscle tone in the former. Since rule A makes alpha rhythm over the occipital region sufficient for stage W and rule B allows scoring as W ‘without visually discernable alpha rhythm’ (2007, 25) when there are rapid eye movements with normal or high chin muscle tone, it seems neither is necessary.[[21]](#footnote-21) In fact the similarities at a neurophysiological level between stages W and R have led to REM sleep being commonly referred to as ‘paradoxical sleep’ (Jouvet, 1965). This raises complex questions about how expert lucid dreamers engaged in making pre-arranged signals to the experimenter should be scored. Let us assume that LaBerge is following the manual precisely and these subjects are correctly scored as being in stage R. That does not in fact show that they are asleep in the sense in which normal dreamers are asleep, precisely because the rules for scoring are not designed to take into account these unusual subjects in an unusual state.

Suppose we extended the manual to include definitions of *day-dreaming*, in particular the state we sometimes call ‘tuning out’ or ‘being away with the fairies’, and hypnagogic/ hypnopompic hallucinations, with the explicit intention of distinguishing these from the five stages already defined. How would these relate to the state of the expert lucid dreamer engaged in signaling? I have no idea what the polysomnographic data would show, but it is highly likely from what we know about these states that we would find several dimensions of similarity and difference. Consequently, any operational scoring of stages would depend to some extent on decisions made relative to our interests in these states. The primary interest here is likely to be clinical – diagnosis and treatment of sleep disorders – and from that perspective whether an epoch is preceded or succeeded by a sleep stage is highly relevant and likely to result in the special states of lucidity being classed as more similar to the hypnagogic/hypnopompic hallucinations than to day-dreaming. However, that method of scoring tells us nothing at all about the intrinsic character of the state and if applied too rigidly will have trouble identifying micro-sleeps and micro-awakenings.

It seems then that LaBerge’s experimental method using expert lucid dreamers promises to provide the crucial evidence in favour of the standard model, but only succeeds in doing that against the context of certain assumptions about the differences between sleep and wakefulness. We could express the argument of this section as a dilemma: expert lucid dreamers engaged in signaling to an experimenter are either awake or asleep. If they are awake, then they are undergoing a rare form of day-dreaming with REM sleep paralysis, but as such are not relevant to discussions of normal, sleeping dreams. If they are asleep, then while they have unusual abilities to learn sleep behaviours, we are not obliged to explain those behaviours using the model of conscious experiences and intentions which applies to waking subjects.

(4) There remains a more purely philosophical concern over the dialectical position. Sensory imagination also appears to involve phenomenal character not explainable by acquaintance and the reasons for questioning the standard model of dreaming do not apply in such cases. Consequently, the philosopher interested in using acquaintance to explain phenomenal character will have to be a disjunctivist when it comes to sensory imagination. Furthermore, there are familiar arguments that dreaming should be classified as a form of sensory imagination (e.g. Ichikawa 2009), and this would thereby preserve the standard model without creating new challenges for the acquaintance theorist.

This objection presupposes that we must accept the phenomenal character of sensory imagination as a given. It is, of course, open to the acquaintance theorist to deny this and to want to do so for precisely the reasons we discussed in section 2. But that would be the subject of another paper. Equally, the acquaintance theorist might argue, along the lines of section 2, that the benefits of not rejecting the standard model are outweighed by the benefits of rejecting it, namely denying that there is such a large stretch of our conscious mental lives, rich in phenomenal character, outside the explanatory scope of their theory of phenomenal character.

Setting these responses on one side, let us consider how plausible it is that dreaming on the standard model is a form of sensory imagination. Ichikawa notes there are various options for the role of imagination here since dreams involve both perceptual experiences and beliefs based on them: imagined perception with actual belief; actual perception with imagined belief; imagined perception with imagined belief. The main objection to the imagined perception is that dreams are mainly involuntary whereas sensory imagination is voluntary. The main objection to imagined belief is that dream beliefs seem to have the functional role of actual beliefs. What he overlooks is that what is driving the objection to dreams beliefs being imaginings in fact provides a deeper objection than involuntariness to the claim we are currently considering, namely that dream perceptions are sensory imaginings.

Consider Hume’s famous claim that ‘the imagination the perception is faint and languid, and cannot without difficulty be preserv’d by the mind steddy and uniform for any considerable time. Here then is a sensible difference betwixt one species of ideas and another’ (*Treatise* 1.1.3). This is standardly interpreted[[22]](#footnote-22) as saying that imaginings are qualitatively distinct from perceivings (and rememberings) and it is objected that perceptions might lack vividness and imaginings possess it. But in fact our sense that the view is absurd doesn’t derive from the existence of counterexamples but from the fact that perception is presentational whereas imagination is not. To use a common early modern phrase, in imagination we ‘conceive as possible’, emphasizing that the objects of imagination are presented as possibilities, whereas to perceive is to be related to actuality. Thus an account of dreaming as sensory imagination would have to find a supplementary explanation of why the subjects report their dreaming experiences as perceptions, as presenting actuality rather than possibility.[[23]](#footnote-23) While this would be possible, it shows that the move does not in fact preserve the standard model intact and thus increases the dialectical force of the second response noted above.

6. Conclusion

I argued that a naïve realist who appealed to disjunctivism in order to relegate dreaming to the ‘bad cases’ thereby weakened the value of their explanation of phenomenal character in the good case of acquaintance with the external world. In the light of this, I considered what options there are for the naïve realist when considering dreaming and noted that it is the standard model of dreams and dreaming which causes the problem. There are some well-known problems with the standard model, on the basis of which alternatives have been suggested. I tried to motivate an alternative which preserves and explains our culture and practice of dream reporting without regarding those reports to be expressions of roughly accurate memories of conscious nocturnal experiences. While it is possible to construct such an alternative, neither the problems with the standard model nor the existence of alternatives have resulted in more than a handful of mavericks rejecting the standard model. So I explored what evidence there might be to support the standard model and concluded that it was inconclusive and in many cases question-begging.

Where does this leave the dialectic? We have no direct evidence for or against the occurrence of dreaming, though we are all subjectively convinced it happens. But we have two empirically inconsistent models which are roughly equal in their explanatory adequacy (depending how you weight phenomena like Maury’s dream against the conviction that we are remembering our dreams). We could hold out for new direct evidence or new differences in explanatory adequacy, but absent such developments, it seems like a reasonable basis for choice is fit with our best theories elsewhere. And here the naïve realist who wishes to explain the phenomenal character of perceiving by our being acquainted with external objects has a reason to reject the standard model of dreaming.

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1. I shall use the expression ‘when all is going well’ as a neutral way of picking out cases of perception which are not illusory or delusory or otherwise inclined to mislead an unsuspecting subject. [↑](#footnote-ref-1)
2. The noun-phrase ‘perceptual experience’ is used by philosophers in many different ways. I am restricting it throughout this paper to be a label for answers to the question ‘How does S perceive the world to be?’ While every perceptual experience in this sense is always some specific subject’s experience, it does not follow that it is an event in or state of that subject. To take a description of how someone perceives the world to also be a description of how things are with her is to make a philosophical move (Stoneham 2008). [↑](#footnote-ref-2)
3. The conclusion of this paper amounts to a denial of (i) for the case of dreaming, so the argument will receive a partial response. [↑](#footnote-ref-3)
4. That artificial irrigation is as good for plant growth as natural humectation is so obvious to us that the point is easily obscured. But it is not hard to imagine a society where that was not so obvious. [↑](#footnote-ref-4)
5. I owe this example to Dorothea Debus, who has pushed me hard on all of (i) – (iii). [↑](#footnote-ref-5)
6. A good example of this is Philips (2013), who gives a very thorough and careful account of the phenomenology of after-image experiences and why these do not support a ‘sensation’ account, but then proposes that they are ‘illusory presentations [hallucinations?] of pure visibilia’ (2013, 427), ensuring they fall squarely into the list of bad cases. [↑](#footnote-ref-6)
7. Schneider, A., & Domhoff, G. W. (2017). The Quantitative Study of Dreams. Retrieved January 24, 2017 from http://www.dreamresearch.net/ [↑](#footnote-ref-7)
8. Note that this model has a fifth stage, translation from recall to report, to explain some of the phenomena discussed below. [↑](#footnote-ref-8)
9. Foulkes adds to his definition of A-type dreams, or dreaming, that ‘[o]ur best, and perhaps only reliable, knowledge of this mentation comes from a person’s report recorded immediately following abrupt arousal from the experience in question’ (1999, 35). [↑](#footnote-ref-9)
10. Freud mentions both these problems (1976, Ch.1) but sticks to the standard model. [↑](#footnote-ref-10)
11. <http://articles.latimes.com/1995-02-02/news/mn-27322_1_dream-expert> accessed 04/04/17. [↑](#footnote-ref-11)
12. Burton cites Galen on cabbage (*Anatomy of Melancholy*, I.II.II.I) as well has hare and pulses, and also notes that sleeping in the daytime ‘upon a full stomach … increaseth fearful dreams’. [↑](#footnote-ref-12)
13. Care is needed here because some foods do cause involuntary and unpleasant images in some people even while awake, possibly because their high tyramine content causes a release of catchelomines. But unless we have reason to think this is a mechanism which is common in sleeping subjects and rare in waking subjects, it will not explain the ubiquity of the alleged correlation between foods and bad dreams. Thanks to Louise Moody for pointing out this phenomenon. [↑](#footnote-ref-13)
14. The reflexivity movement in psychotherapy is a good example of systematically working with those factors – called the ‘Social GGRRAAACCEEESSS’, standing for Gender, Geography, Race, Religion, Age, Ability, Appearance, Class, Culture, Ethnicity, Education, Employment, Sexuality, Sexual Orientation, Spirituality – in a therapeutic context (e.g. Burnham 2012). But they are present in all conversations where we expect to be interpreted, assessed or judged and reporting dreams is, in our culture, one such context. [↑](#footnote-ref-14)
15. Rosen (2013) gives an excellent account of how the content of dream reports is constructed from these factors. However, she thinks that there is empirical evidence that something like dreaming occurs during sleep, merely denying that dream recollections are reliable guides to what that experience is like. I discuss the issue of empirical evidence in section 5 below. [↑](#footnote-ref-15)
16. See (Lucretius, Bk 4, 1025-1036) for an early poetic description. [↑](#footnote-ref-16)
17. The long-standing debate in popular culture about reason vs. emotion, personified in Star Trek’s Spock and Kirk, reminds us that classing a phenomenon as a cognitive imperfection doesn’t rule out finding it non-instrumentally valuable. [↑](#footnote-ref-17)
18. Claims about the reliability of dream reporting in the psychological literature often cite studies which compare reports given during the night with those given the next day (Baekland & Lasky, 1968; Meier, Ruef, Zeigler, & Hall, 1968; Strauch, 1969; Trinder & Kramer, 1971). Clearly this presupposes the accuracy of the nocturnal report, or at least takes that as a methodological starting point. [↑](#footnote-ref-18)
19. The similarities are quite limited: the jerky twitching of legs is not at all like the graceful running of the greyhound, most sleep talking consists of disconnected phrases unlike waking speech, and the sleep-walker is usually easy to spot from their gait and posture. More plausibly similar, but less familiar, are cases of REM Sleep Disorder, however in all but the rarest cases there is ‘complex motor behaviour’ rather than actual acting out of complex scenarios which requires something more clearly under intentional control (which might be what is going on in this famous video: <https://youtu.be/Js50Orx94iM>) [↑](#footnote-ref-19)
20. We should not underestimate what normal humans are able to learn to do in their sleep. One striking example is that children learn not to roll out of bed while asleep, but there are also quite common abilities to learn more particular actions. Consider the way that when sleeping in an unfamiliar location or without a familiar sleep-partner, some of our habitual sleep behaviours fail and we wake in surprise. Now note that this doesn’t always happen, and happens less to some people. Which is to say some of us, some of the time, are able to control our sleeping behavioural habits to adapt to a new environment. And many people find it easy to sleep through a recurring noise, such as traffic or a clock chime *once they know what it is*. The abilities of expert lucid dreamers are more striking, but not obviously of a different kind to these abilities. [↑](#footnote-ref-20)
21. Rule B also refers to ‘reading eye movements’ which is a criterion that can only be applied in certain contexts and I will set aside for this discussion. [↑](#footnote-ref-21)
22. But arguably incorrectly (Everson 1988). One person who certainly believed that an imagining made more vivid and coloured would turn into a perception was Arthur Collier (1713, 17-18). [↑](#footnote-ref-22)
23. Many philosophers appeal at this point to the famous Perky experiments (Perky, 1910). However, they fail to take into account Segal’s work (1971, 1972) which is only able to replicate Perkey in ways which suggest that the phenomenon is not one of mistaking a perception for a sensory imagining at all, but interference of the perception in the process of imagining. [↑](#footnote-ref-23)