The Attentive Mind

by

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Abstract

When theorists are engaged in the study of attention, they should not ask questions about “attention” simpliciter. They should instead always specify whether perceptual attention or what William James called “intellectual attention” is under discussion. James distinguished between the two varieties of attention with reference to their objects. He said that perceptual attention can be directed at “sensorial objects”, by which he means “object that an agent is perceiving, or could be perceiving”, and that intellectual attention can be directed at “ideal or represented objects” (James 1890 p. 416).

In this dissertation, I develop a sufficient condition for intellectual attention and put my sufficient condition to two philosophical uses. On my view, using information from a personal level cognitive representation of that object to guide the performance of some primary task is sufficient for intellectual attention to that object. My sufficient condition is motivated by the practice of scientists studying intellectual attention and is compatible with a pluralistic approach to the metaphysics of attention. I use this sufficient condition to argue that intellectual attention can alter cognitive consciousness, and to argue that intellectual attention is required to comprehend some singular terms.
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Introduction

When theorists are engaged in the study of attention, they should not ask questions about “attention” *simpliciter*. They should instead always specify whether perceptual attention or what William James called “intellectual attention” is under discussion. James distinguished between the two varieties of attention with reference to their objects. He said that perceptual attention can be directed at “sensorial objects”, by which he means “object that an agent is perceiving, or could be perceiving”, and that intellectual attention can be directed at “ideal or represented objects” (James 1890 p. 416).¹

In this dissertation, I develop a sufficient condition for intellectual attention and put it to two philosophical uses. In the rest of this introduction, I describe the phenomenon of intellectual attention, and then go on to describe the philosophical motivations for developing my sufficient condition for intellectual attention. Lastly, I give a brief look at the philosophical questions that I think my sufficient condition can be brought to bear on.

1. The distinction between perceptual and intellectual attention

James distinguished perceptual attention and intellectual attention with reference to their objects. He said that perceptual attention can be directed at “sensorial objects”, by which he means “object that an agent is perceiving, or could be perceiving”, and that intellectual attention can be directed at “ideal or represented objects” (James 1890 p. 416).

More recently, many psychologists claiming to adopt James’s distinction have said that

¹ What he means by “represented objects” seems straightforward, but what he means by “ideal objects” is less clear. But as I will explain, to get the project of this dissertation started we just need to accept that there is a distinction of some sort to be made between perceptual attention and intellectual attention. Adopting James’s precise way of making the distinction, or even fully understanding what it amounts to, is not required.
perceptual attention is directed at external objects, by which they mean the same thing as James, and that intellectual attention is directed at “internal objects”, by which they mean “mental representations”.

It’s important to realize that there is actually a substantive difference between these two proposals about how to distinguish perceptual attention from intellectual attention. James’s distinction leaves open the possibility of intellectual attention to any sort of represented object, including an object that an agent is currently perceiving. But according to the contemporary psychologists’ way of making the distinction, intellectual attention is always directed “inwards” at a mental representation. At present, the question of which of these two ways of distinguishing between perceptual and intellectual attention is preferable is an open one. I address that question in the first chapter of this dissertation, where I criticize both of these methods and offer my own way of distinguishing between perceptual and intellectual attention. On the view that I’ll develop in the first chapter, but then refine in the second chapter, using information from a personal level cognitive representation to guide the performance of a task is sufficient for intellectual attention. My approach in that first chapter parallels Wu’s (2014) approach to arguing that using information from a personal level perceptual representation to guide the performance of a task is sufficient for perceptual attention.

In distinguishing between perceptual kinds of processing and cognitive kinds of processing, I use “cognitive” to refer to the non-perceptual kind of mental processing, and

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2 Recently, “internal” and “reflective” have become more popular terms than “intellectual”, but the psychologists using these terms say explicitly that they intend to mark the same distinction that James did (see, e.g. Chun, Golomb, and Turk-Browne 2011 p. 77 and Backer and Alain 2014 p. 439).
not in the broader way that it is used when we say something like “the subject matter of cognitive science”. Clearly, the subject matter of cognitive science includes perceptual processing. For now, we can rely on the idea that paradigm cases of perceptual processes include processes like seeing and hearing, whereas paradigm cases of the narrow kind of cognitive processes include processes like judging, imagining, believing, or remembering. In the first chapter of the dissertation, along the way to developing a sufficient condition for intellectual attention, I develop and motivate a more precise way of distinguishing between perception and cognition.

With these initial ideas on hand, we can move on to discussing why distinguishing between intellectual attention and perceptual attention, as well as making that distinction precise, is a philosophically important activity.

2. The risk of equivocation

Distinguishing between perceptual attention and intellectual attention gives us additional resources to help us understand when theorists studying attention are actually miscommunicating with each other rather than genuinely disagreeing with each other. Expanding our resources to deal with that sort of problem is useful for any area in philosophy, but especially critical for the study of attention. Psychologists and philosophers have argued that miscommunication due to unacknowledged, different ways of understanding “attention” has been a particular problem with the study of attention for almost as long as attention has been an object of psychological and philosophical inquiry (see e.g. Anderson 2011).
I think we should take the risk of miscommunication due to equivocation extremely seriously. In the first and second and chapter of this dissertation, where I develop and refine a sufficient condition for intellectual attention motivated by the practice of science, one of my aims is to help theorists minimize that risk of miscommunication by giving them a well-motivated sufficient condition for intellectual attention to use in their own research.

One reason I think that psychologists should endorse my sufficient condition is that it, like Wu’s sufficient condition, provides a unifying explanation of the inferences of psychologists who work in several different research paradigms. Unifying explanations of this kind are extremely valuable because they reveal that although these psychologists might on the surface appear to use the word “attention” in different ways, a large group of them are actually all using the word in the same way when it really matters – i.e., when they come to conclusions about attention (see Wu 2014 pp. 270-271). Endorsing such a theory of attention, therefore, goes along with being able to explain why we should resist the skepticism that some psychologists have about the progress of our collective study of attention. Moreover, while developing a sufficient condition for intellectual attention can help theorists minimize the risk of miscommunication, simply distinguishing between intellectual attention and perceptual attention can help theorists minimize the risk of miscommunication, as well.

To demonstrate how just distinguishing between perceptual and intellectual attention can help us resolve this kind of miscommunication, I will now analyze and resolve an apparent disagreement between Mole (2008) and Mack & Rock (1998).

I examine the issue in some detail here because I do not address the issue of verbal disagreements about attention later in the dissertation. But I think it is worth pausing to
look at one case in detail in order to fully appreciate the extent to which ignoring the concept of intellectual attention can cause theorists studying attention to miscommunicate. Mole, I will argue, thinks that Mack & Rock argue for the thesis that we can perceptually attend to something without being perceptually conscious of it. But I will argue that in the passages Mole cites, Mack & Rock argue for a much less contentious thesis: the thesis that we can intellectually attend to something without being perceptually conscious of it.

This miscommunication occurs in his article “Attention and Consciousness” (2008), where Christopher Mole addresses arguments against what he calls the common-sense picture of the relationship between perceptual attention and perceptual consciousness. This common-sense picture, Mole argues, is motivated by reflections on our everyday experiences. Here is how Mole puts those reflections:

In our everyday encounter with the mental we take the relationship between attention and consciousness to be a close one. We catch someone’s attention as a way to influence what he is conscious of, and it is by introducing something into his field of consciousness that we catch his attention...

The fact that we expect attention and consciousness to behave in these ways is made intelligible if we understand common-sense psychology to treat paying attention to something as a way of being conscious of that thing: a way that locates the thing attended in the foreground of experience. According to common-sense psychology, then, attention requires consciousness (Mole 2008 pp. 88-89).

Mole’s claim attention causes something to be located in the “foreground” of conscious experience is worth elaborating on a bit. The claim in question is the thesis that consciously attending an object causes our experience of that object to become foregrounded (or more vivid, or more central) in our fields of consciousness. Mole (2008) argues that this claim is a part of the folk theory of attention and consciousness.
Here’s an explanation of what it means for something to be made more foregrounded, or more vivid, or more central in consciousness. Consider figure below:

![Figure 1: Three crosses]

There are (at least) two different ways to see this image. While directing your gaze at the centre cross, you can focus your visual attention on the cross on the left, in which case the cross on left seems to be in the foreground of your consciousness and cross on the right seems to be in the background of your consciousness. Alternatively, while directing your gaze at the centre cross, you can focus your visual attention on the cross on the right, in which case the cross on the right is in the foreground of your consciousness and the cross on the left is in the background of your consciousness. Mole’s claim is that, according to the common sense view of visual attention and visual consciousness, shifts in visual attention seem to cause changes in what is in the foreground of visual consciousness.

According to Mole, some psychologists have argued that certain results threaten the common-sense picture of the relationship between visual attention and visual consciousness (see, e.g., Mack & Rock 1998, Kentridge & Heywood 2001, and Koch &
Some of them have argued that attention is psychologically necessary for consciousness, while others have argued that consciousness is not psychologically necessary for attention. Most of these psychologists’ arguments are based on surprising data that they have collected, but a few are based on reflection on ordinary experience. In this section, I argue that Mole misinterprets one of the arguments based on reflection on ordinary experiences. I think that this argument was actually unrelated to the common-sense thesis that Mole was interested in defending.

According to Mole, Mack & Rock reject the claim that perceptual consciousness of an object is required for us to perceptually attend to that object, and moreover they argue that such a claim is not a part of the common-sense picture of the relationship between attention and consciousness (2008 p. 98). This is the passage from Mack & Rock that Mole uses to justify that claim:

Unfortunately, although the proposal that conscious perception and attention refer to identical processes has the advantage of simplicity, it is discredited on several grounds. First, it would appear to lead to the false conclusion that there can be no attention without [conscious] perception. This conclusion seems false on both experiential and empirical grounds. (Mack & Rock 1998 p. 245).

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3 Mole has, in fact, changed his view about whether this line of research undermines the common sense view. In “Attention to Unseen Objects” (2014), he argues that worked published after his paper “Attention and Consciousness” (2008) has actually managed to undermine the common-sense view.

4 Note, however, that I do not mean to take issue with Mole’s broader project in his paper, in which he seems to correctly interpret other arguments of Mack & Rock’s arguments in favour of more restricted theses, and to fruitfully engage with those arguments. My goal in this section is just to look at why one of his arguments rests in a misinterpretation in order to provide some evidence for the claim that the distinction between perceptual and intellectual attention can help theorists avoid miscommunicating with each other.

5 Mole does not put the thesis quite this way: he says that they reject the claim that consciousness is required for attention (2008 p. 98). But earlier he states that what he means by that is the claim that consciousness of an object is required for attention to that same object (2008 p. 89).
I am interested just in the experiential grounds that Mack & Rock cite as counterexamples to the thesis that there is no attention without conscious perception. The experiences that Mack & Rock cite as counterexamples to this thesis are “looking for something or keenly awaiting its appearance in the absence of perceiving it” (1998 p. 245).

Mole agrees with the observation that we can keenly await something’s appearance without perceiving it, but says that the observation “doesn’t make the point that [Mack & Rock] think it makes”, because “although one can’t attend to just any arbitrary absence, one can, for example, give full attention to a radar screen, waiting for a pip even when no pip comes” (2008 p. 98). Mack & Rock’s approach, Moles goes on to argue, “confuses the perception of absence with the absence of perception” (2008 p. 98). Thus, Mole seems to believe that Mack & Rock believe that a subject’s looking for something or keenly awaiting its appearance are activities that involve the subject’s perceptual attention to, but no perceptual consciousness of, the objects that they are looking for or awaiting.

As Mole points out, such a view seems to be mistaken. Keenly waiting for a pip to show up on a radar plausibly just involves perceptually attending to and being perceptually conscious of the radar screen, and then - only after the pip appears - perceiving the pip and perceptually attending to it. On Mole’s interpretation, then, Mack & Rock’s argument fails. Moreover, their argument fails very obviously. But I think that their argument fails so obviously that it should be puzzling to us that Mack & Rock thought of the argument at all – on Mole’s interpretation of their argument, anyways.

The distinction between perceptual and intellectual attention, however, puts us in a position to interpret Mack & Rock differently. Mole interpreted Mack & Rock as making the
following argument:

(1) People with ordinary vision can look for something, and thereby perceptually attend to it, without consciously perceiving it.

(2) Therefore, people with ordinary vision can perceptually attend to something without consciously perceiving it.

But with the distinction between perceptual and intellectual in hand, we may instead interpret Mack & Rock as making the following crucially different argument:

(1) People with ordinary vision can look for something, and thereby intellectually attend to it, without consciously perceiving it.

(2) Therefore, people with ordinary vision can intellectually attend to something without consciously perceiving it.

My interpretation gives us the resources to tell the same story about Mack & Rock's discussion of waiting for a pip to appear on a screen: we could say that they thought that we can think intently about the pip that is about to appear, and thereby intellectually attend to it without consciously perceiving it (I'll discuss the potential problems with this view when I discuss their argument in favour of it in more depth below).

As Mack & Rock suggest, reflection on examples like the ones they mentioned certainly suggests that their thesis is true. Thinking intently about an object - so intently that we call the thought “attentive thought” – seems like it can obviously happen when the object is not in perceptual range or perceptible at all. This kind of thought can sometimes impair perception, as Aristotle notes in *On the Sense and the Sensible*: “… persons do not perceive what is brought before their eyes, if they are in deep thought, or in a fright, or listening to some loud noise” (Sens. 447a14-16 trans. J. I. Bear). The day to day experience of intense thought interfering with perception that Aristotle notes has even been replicated
in the laboratory: see Fougnie and Marois (2007) for evidence that mentally alphabetizing a list of letters can cause inattentional blindness, and that merely remembering the list without making an effort to order it does not cause inattentional blindness.

On my interpretation, then, Mack & Rock’s argument is grounded in common-sense assumptions about conscious thought and perception that have been empirically corroborated. So on my view, their argument actually makes sense and it seems to be a good argument. For reasons of charity, therefore, we ought to strongly prefer my interpretation of Mack & Rock to Mole’s interpretation of Mack & Rock. Moreover, reasons of charity are not the only reasons to prefer my interpretation. Mack & Rock actually raise two more arguments based on ordinary experiences to establish the point that we can attend to something without being conscious of it. The way that Mack & Rock present these two arguments make it clear that the kind of attention they have in mind is intellectual and not perceptual. I’ll discuss these arguments in turn.

In their second additional argument, which makes the point most clearly, Mack & Rock say that we can attend to non-perceptible objects, like “ideas” and “feelings”, without perceiving them, and that this observation also problematizes the thesis that there is no attention without perception (1998 p. 246). So they must mean to say that we can intellectually attend to ideas and feelings without consciously perceiving them— they couldn’t have meant to say that we can’t consciously perceive ideas but that we can perceptually attend to ideas. It might be possible to conceive of a subject rigged up to have

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6 My interpretive strategy, like Mole’s, involves looking to Mack & Rock’s use of the word “attention” to figure out what “attention” means for them. The explicit definition they give in the introduction to their book is clearly inconsistent with the way they use the word throughout much of the rest of the book (see Mole 2008 pp. 93-94 for discussion).
such a combination of psychological capacities, but Mack & Rock are clearly talking about the capacities of normal humans.

In their third additional argument, Mack & Rock say that when we are tasked with reacting when a pip appears on a screen, but no pip ever appears, we “attend without perceiving”, and that this observation also problematizes the thesis that there is no attention without perception (1998 p. 485). This argument is a bit more puzzling than the other arguments—as Mole correctly points out, carefully watching screens seems to involve consciously perceiving the screens and perceptually attending to the screens. But it seems to me that we can interpret Mack & Rock as meaning that we intellectually attend to the pip without perceiving the pip because, in this case, carefully watching the screen involves perceiving and perceptually attending to the screen and intellectually attending to the pip that is yet to arrive without consciously perceiving the pip.

Of course, this line of argument might fail: there seems to be an interesting empirical question to be asked about whether the swift way we respond to pips when we are watching screens carefully can be fully explained by our being vigilant while waiting for the pip to appear, or whether we also need to posit that intellectual attention plays a role in causing our speedy reactions to the pips. Moreover, there are several versions of that latter hypothesis that would need to be distinguished: e.g. whether that intellectual attention is directed at a nonexistent pip, or whether that intellectual attention is directed at pips in
But these potential problems pertain to whether Mack & Rock were right in making this additional argument, and my interest here is just in the proper interpretation of Mack & Rock. It seems to me that having the concept of intellectual attention ready to hand is crucial for interpreting their arguments about attention and consciousness correctly, and thereby crucial for addressing the miscommunication between Mole and Mack & Rock.

3. Questions about attention and consciousness

Recall Mole’s description of the common sense picture of the relationship between visual attention and visual consciousness above. In normal conditions, we seem to enjoy conscious visual experiences of the array of objects that is before us. However, our conscious visual experiences of objects are not all of equal vividness - one object or group of objects usually seems to occupy the foreground of our visual consciousness. The question of whether this is really the common sense picture of the relationship between perceptual attention and perceptual consciousness, and of whether it is the right one, has been discussed in some depth in the recent philosophical and psychological literature on attention.8

However, the cognitive analogues of those questions have not been addressed, or even really recognized as interesting questions in their own right. For example, is there

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7 The suggestion that it is possible to intellectually attend to a pip that doesn’t exist yet also raises the question of whether we can have a singular thought about an object that doesn’t exist yet, which we do not need to resolve here - see Recanati 2012 p. 164 for discussion. Again, our focus here is on what Mack & Rock seem to believe rather than the plausibility of what they seem to believe.

8 See e.g., Koch and Tsuchiya (2007), Mole (2008), Kentridge (2011), Norman, Heywood, & Kentridge (2013) and Mole (2014) for arguments about whether or not there is unconscious perceptual attention.
there something like a cognitive analogue of the visual phenomenon involving the three crosses that I described above? Can we, for example, think multiple thoughts at the same time, and while doing so focus on one of the thoughts, and thereby move that thought into the foreground of conscious cognition?

It’s important to note that this question is not just interesting in its own right, but something that bears directly on conclusions that philosophers and psychologists have made about attention and consciousness, in general. Prinz (2011), for example, argues that attention is necessary for consciousness, while Smithies argues (2011) that attention is sufficient for consciousness. Koch and Tsuchiya (2007), on the other hand, argue that attention is *neither* necessary nor sufficient for consciousness. But the majority of all of their arguments in favour of their views are really about the relationship between *visual* attention and *visual* consciousness. The question of whether the relations that obtain between visual attention and visual consciousness obtain between *all* the varieties of attention and consciousness is one that still needs to be taken up in the literature.

As I’ll discuss in some more depth later in the dissertation, theorists seem to disagree more frequently about the correct description of the structure of the phenomenology of conscious cognition than about the correct description of the structure of the phenomenology of conscious perception. Michael Martin, for example, describes the phenomenology of conscious cognition in the following way:

“In [the perceptual case] it is tempting to think of experience in terms of a whole array of items stretching beyond what I have focused my attention on at a time - an array over which I could move my attention, as a beam or a spotlight. It is as if I am aware of the whole array at a time ... whether I now focus my attention on one
part of it or not ... There seems to be no corresponding array of items to shift one's attention over in thought... (Martin 1997 p. 78).

On this way of thinking, conscious intellectual attention constitutes conscious cognition, while conscious perceptual attention merely modifies conscious perceptual attention. But consider, for example, Elijah Chudnoff’s description of what it is like to perform a geometrical proof:

You consider the proposition that circles are symmetrical about their diameters. In order to tell whether it is true, you need to get clear on which chords on a circle are diameters, and which chords on a circle are axes of symmetry. What you do is imagine an arbitrary circle, and imagine folding it over various chords that divide it into equal parts. These chords are its diameters, and it is clear from your imaginative endeavor that the circle is symmetrical about them... In [this case] you differentiate the property of being a diameter from its background. This background consists of other properties. Which properties? Those in your cognitive field. Your cognitive field consists of all the things you are thinking about—in this case it includes all the different sorts of chords on a circle. To say that you are thinking about all the different sorts of chords on a circle is not to say that each one stands out clearly before your mind. Only one does: the diameter (Chudnoff 2013, pp. 717-718).

On this way of thinking, conscious intellectual attention modifies conscious cognition, just like conscious perceptual attention can modify conscious perception.

In the third chapter of this dissertation I will return to the question of whether Martin or Chudnoff is right, and side with Chudnoff. I discuss the introspective evidence in more depth, and also use the sufficient condition for intellectual attention that I develop in the first two chapters of the dissertation to bring some behavioral evidence to bear on this debate.
4. Intellectual attention and linguistic understanding

The distinction between perceptual attention and intellectual attention also puts us in a position to ask an interesting question about intellectual attention and linguistic understanding. By “linguistic understanding”, I mean the mental state that a person occupies when they comprehend some speech. There are several different accounts of what understanding an utterance amounts to. According to some philosophers, it is knowing what was said by the speaker’s production of the utterance.\(^9\) According to some other philosophers, it is having a perceptual or quasi-perceptual experience of the utterance’s meaning.\(^10\) According to some other philosophers, it is having a cognitive experience of the utterance’s force and content.\(^11\) Whichever of these views is the right one, the question of whether perceptual attention is ever required to comprehend speech and the question of whether intellectual attention is ever required to comprehend some speech are both philosophically interesting questions that can be raised.

The perceptual analogue of the question has been asked, and positively answered, in the philosophical literature on linguistic understanding by, for example, Gareth Evans (1982) and John Campbell (2003). Evans and Campbell both think that perceptual

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\(^9\) See Peacocke (1976) for a version of the knowledge thesis and criticism of simpler views according to which understanding is \textit{just} knowing what was said. See Recanati (2004 pp.5-9) for an explication of the notion of ‘what was said’, and how it differs from ‘sentence meaning’ and ‘what is implicated’. Consider the sentence ‘I am Canadian’. Intuitively, what a use of this sentence conveys to an audience in any context, just in virtue of linguistic convention, is that the speaker is Canadian. We can call this sort of meaning “sentence meaning”. However, it is intuitive to suggest that uses of this sentence almost always, due to context, convey more than just the sentence’s meaning. If I utter the sentence, then it conveys the proposition that “Mark Fortney is Canadian”, which is true, but if Recanati utters the sentence then it conveys a different and false proposition. We can call this sort of meaning “what is said.”

\(^10\) See Hunter (1998) and Fricker (2003) for versions of the meaning perception thesis. On this approach we might characterize the content of the audience’s experience (in part) what was said by the utterance.

\(^11\) See Longworth (2005) for this view and Longworth (ms) for a closely related view. We can think of the notion of ‘content’ here as something analogous to “what was said.”
attention plays a role in the having a perceptual demonstrative thought in general, and in coming to understand a use of a perceptual demonstrative in particular. Here is how Evans puts the view:

... in order to have a demonstrative thought (one that rests upon perceptual information), the subject must be able to make the object out in what he perceives; and there is necessarily a gap between grasping 'The blonde who looks thus and so is F' and 'That blonde is F', because there is always room for an intelligible realization: 'Ah! So that’s the blonde you mean!' (Evans 1982 p. 308).

I think that Evans’ claim that an audience's understanding a perceptual demonstrative requiring “making the object out” in what she perceives is best understood in terms of conscious perceptual attention. Recall, again, Mole’s claim that on the common sense view of perceptual attention, perceptually attending to an object causes it to be foregrounded in consciousness. That’s the view of the relationship between perceptual attention and perceptual consciousness that Evans seems to be presupposing when he says that understanding a use of a perceptual demonstrative requires “making an object out” in perception.\(^\text{12}\)

Secondly, here how Campbell put this view about perceptual attention and linguistic understanding, along with what he took to be the intuitive motivations for it. As we’ll see, he appealed to the same sort of common-sense idea about attention and consciousness that Evans did:

\(^{12}\) Strictly speaking Evans says that in order for a subject to think a demonstrative thought about an object, they must be able to make out the object in what they perceive. But I don’t think he means that such a capacity, unexercised, could really enable a demonstrative thought: when we make realizations like “Ah! So that’s the blonde you mean!”, we seem to be actually exercising the capacity to make the blonde out. So I think it's best to interpret Evans’s remark as one about what's necessary for a demonstrative thought but not as one about what's sufficient for a demonstrative thought.
I think that the simplest way to grasp the common-sense difference between the blindseer and the ordinary subject is to consider an ordinary case in which you and I are sitting at a dinner table with a large number of people around and you make a remark to me about ‘that woman’. There are a lot of people around; I can't yet visually single out which one you mean. So on anyone's account, I do not yet know which woman you are talking about. Suppose now that we add to the example. My visual experience remains as before: a sea of faces. I cannot consciously single out the person you mean. All I get consciously is the sea of faces. ... It is only when I have finally managed to single out the woman in my experience of the room, when it ceases to be a sea of faces and in my experience I focus on that person, that I would ordinarily be said to know who was being referred to. So it does seem to be compelling to common sense that conscious attention to the object is needed for an understanding of the demonstrative (Campbell 2003 pp. 8-9).

Evans's and Campbell's view about the relationship between perceptual attention and comprehending uses of demonstratives, as well as related views about the relationship between perceptual consciousness and demonstratives more generally, have been extensively discussed in the recent philosophical literature.13 But analogous questions about intellectual attention and other kinds of terms have been relatively underexplored.

At present, without a clear account of intellectual attention on hand, and without a resolution to the question of whether intellectual attention causes foregrounding in consciousness in the way that perceptual attention does, we aren't in a position to answer that question. But I return to this question in the fourth chapter of the dissertation, after those initial steps are complete. In the fourth chapter I also take up the question of whether Evans thought that intellectual attention was required for understanding some kinds of speech, as some of his remarks in Varieties of Reference seem to suggest. I'll also offer some reasons to think that, in any case, such a view is a plausible one.

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13 See e.g., Siegel (2003), Dickie (2011), Dickie and Rattan (2009), and Smithies (2011).
3. Conclusion

In this introduction, I’ve argued that there’s a distinction to be made between perceptual attention and intellectual attention, and that it’s philosophically significant. I showed that being aware of the distinction between these kinds of phenomena was very important for addressing Mole’s misinterpretation of one of Mack & Rock’s arguments, and very valuable in that it allowed us to ask two philosophically interesting questions.

In the first half of this dissertation, I continue working on the theme of helping scientists study attention through reducing the risk of equivocation. In the first and second chapters, I do this through developing and refining a sufficient condition for intellectual attention that is motivated by the practice of science, and which allows us to resist pessimism about the progress that scientists studying attention have made over the past hundred years. In the second half of the dissertation, I return to working on the theme of showing that there are philosophically interesting questions to be asked about intellectual attention. In the third chapter, I revisit and resolve the question about intellectual attention and cognitive consciousness that I raised in this introduction, and in the fourth chapter, I revisit and resolve the question about intellectual attention and linguistic understanding that I raised in this introduction.
Abstract:

Perceptual attention is not the only kind of attention. Following Williams James, I distinguish between two kinds of attention: perceptual and intellectual attention. In recent years, the philosophical study of intellectual attention has been neglected in comparison to the study of perceptual attention. In this chapter, I aim to help fill that gap in the literature by unifying and improving on the relatively brief extant philosophical discussions about how to define “intellectual attention”.

I argue that endorsing any of the extant definitions, including James’s, would lead to either unjustifiably precluding the investigation of substantive questions or running the risk of theorists using the term “intellectual attention” in divergent ways. I also criticize the arguments in favour of accepting the extant definitions. In order to address lack of good definitions of intellectual attention, I argue in favour of accepting a merely sufficient condition for intellectual attention rather than a definition. My sufficient condition, like Wayne Wu’s (2014) sufficient condition for perceptual attention, is motivated by the practice of science, and characterizes intellectual attention in terms of selection for action.

In the second chapter of this dissertation, I will refine the sufficient condition I develop here. In this first chapter, I just show that thinking about intellectual attention in terms of selection for action is better than any of the extant ways of thinking about intellectual attention. But as I’ll point out in the second chapter, there are multiple ways to fully develop a selection-for-action account of attention. In that chapter I’ll argue in favour of the view that what’s really sufficient for intellectual attention is selection for just a certain kind of action – what I will call the performance of a “primary task”.

Chapter 1: A Sufficient Condition for Intellectual Attention
Chapter 1

1. Introduction

Despite a recent surge of philosophical interest in attention, there remain deep and enduring disagreements about what sort of thing attention really is. Wayne Wu (2014), in response to this problem, has helpfully proposed that we should identify a merely sufficient condition for attention that everyone, or at least a significant portion of the community, could agree on. Wu identifies, in particular, a sufficient condition for perceptual attention rather than every kind of attention.

Having such a sufficient condition on hand would allow us, as a community of researchers, to ask and answer some questions about perceptual attention without needing to make divisive metaphysical commitments about its nature at the outset any given investigation. This is an extremely appealing goal that should be of interest to anyone who studies perceptual attention or some of the phenomena that attention is arguably closely linked with, such as agency and consciousness.

But perceptual attention is not the only kind of attention, and therefore Wu’s proposal will not help us study all the varieties of attention. Following William James (1890), I distinguish between two kinds of attention: perceptual and intellectual attention. In recent years, the study of intellectual attention has been neglected in comparison to the

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14 See Watzl 2011b for a discussion of some recent proposals.

15 In the same text, Wu's primary goal is to argue in favour of a view about the nature of attention and the relationship between attention and actions in general (rather than just the performance of experimental tasks). But those views are not what I discuss in this chapter.

16 See, e.g., Wu (2011a, 2011b, 2014) and Mole (2011) for discussions of the relationship between attention and agency, and Watzl (2011a) and Smithies (2011) for discussions of the relationship between attention and consciousness.
study of perceptual attention. I aim to help fill that gap in the literature by unifying and improving on the relatively brief extant philosophical discussions about how to define “intellectual attention”.

In this chapter, I will criticize all the extant definitions of intellectual attention and motivate a new sufficient condition for intellectual attention. But before engaging in those two tasks, I will say a bit more about what I take the phenomenon of intellectual attention to be, and why I think we need to engage in the project of finding a definition or sufficient condition for intellectual attention. Intellectual attention is the intellectual (or, equivalently, cognitive) kind of attention, and so before discussing the phenomenon of intellectual attention I’ll briefly discuss attention and the perception-cognition demarcation.

“Attention” is hard to define both quickly and non-controversially. But as William James pointed out, there is at least some sense in which everyone knows what attention is (1890 p. 403). His thought was not that every one of us has intimate knowledge of the nature of attention. His thought was that just by making use of our competence with the word “attention” and reflecting on the experiences that we have had, we can point (albeit mentally) to some paradigm instances of attention. According to James, one feature (of several features) that all of these paradigm instances seem to have in common is that they all involve what he called a “focalization of consciousness” (James 1890 p. 403).

Now, it might be that we are mistaken about some of these apparently paradigm cases of attention. But unless we think that we are mistaken about most of them, or all of them, it is safe to use them as a starting point for engaging in systematic theorizing about attention - just as many philosophers have done in the initial steps of their work to
discover the nature of attention (see, e.g., Mole 2011, Smithies 2011, Watzl 2011a, Jennings 2012, Koralus 2014). On this way of thinking, intuitions about apparently paradigm cases don’t tell us what the right account of attention really is; intuitions about apparently paradigm cases *just* provide us with some initial guidance as to what a right account would look like.

Similarly, as I pointed out in the introduction to the dissertation, we have a rough and ready understanding of what “perception” and “cognition” mean. And this understanding allows us to pick out apparently paradigm cases of both. Seeing a pomegranate, hearing a trumpet, tasting coffee – these are apparently paradigm cases of perception. Thinking about an argument, remembering the sound of someone’s voice, planning what to have for dinner – these are apparently paradigm cases of cognition. There are hard questions to ask about where to precisely mark the boundary between perception and cognition, but for now just this understanding of these terms will suffice (see Beck ms for further discussion of the demarcation).\(^{17}\)

Now, it’s clear from reflecting on some of the apparently paradigm cases of attention that the distinction between at least two kinds of attention – perceptual attention and intellectual attention – is apt.\(^{18}\) Consider the cases below, help motivate the idea that such a distinction is apt:

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17 Note that the project of this chapter would *not* be rendered otiose by the discovery that the demarcation between perception and cognition is blurry rather than sharp, and that every mental process is perceptual and cognitive to some degree. Even if that were true, there would surely be useful generalizations to be made about the instances of attention closer to either end of the perception-cognition continuum.

18 Here, for convenience, I repeat some material from the introduction about ordinary thought and talk about intellectual attention.
(A) She listened most attentively to all that passed between them, and gloried in every expression, every sentence of her uncle, which marked his intelligence, his taste, or his good manners. (Austen 1813)

(B) Clerval at first attributed my unusual spirits to joy on his arrival, but when he observed me more attentively, he saw a wildness in my eyes for which he could not account, and my loud, unrestrained, heartless laughter frightened and astonished him. (Shelley 1823)

(C) …[I]n my opinion a man has no manly motive or sustainment in his own breast for facing dangers, unless he has well considered what they are… On this principle I have so attentively considered (regarding it as my duty) all the hazards I have ever been able to think of, in the ordinary way of storm, shipwreck, and fire at sea… (Dickens 1856)

(D) But armed uprising is a special form of political struggle, one subject to special laws to which attentive thought must be given. (Lenin 1917)

The above four passages are all similar in one respect: they are about subjects that are engaging in some attentive mental processing (or, in the final case, such a kind of mental process being discussed). But it also seems like the attention at issue in (A) and (B) is different in kind from the attention at issue in (C) and (D). (A) and (B) describe subjects attentively engaging in some attentive perceptual processing, while (C) and (D) describe subjects engaging in some attentive cognitive processing. So this range of cases seems to show, according to ordinary thought and talk anyways, that attention can come in intellectual and perceptual varieties.19

Our ability to identify the attention in (C) and (D) as intellectual attention is a demonstration of the fact that we have a capacity to point out apparently paradigm cases of

19 A complication, of course, is that all the cases above refer to subjects that are engaged in more than one activity at once. The subject in (A), for example, is not just listening attentively. A complete specification of what it is like to be her would surely need to mention that she is consciously thinking about what she is listening to, and consciously thinking is a cognitive activity. But this does not speak against the point that the attention that is paid in (A) is a perceptual kind of attention. Strictly speaking, the description of (A) leaves unspecified whether the rest of the activities performed were attentive or inattentive – perhaps things could have gone either way.
intellectual attention. Some theorists might argue that having such a capacity is all we need to get the philosophical and scientific investigation of intellectual attention started. Other theorists have tried, however, to begin their investigations of intellectual attention by saying something a bit more precise about what “intellectual attention” means.

This seems like a reasonable thing to do, given the possibility that theorists might mean slightly different things by “attention” and “cognition”. If that were the case, they might pick out and investigate different phenomena. And psychologists and philosophers have argued that this risk of equivocation has been a particular problem with the study of attention for almost as long as attention has been an object of psychological and philosophical inquiry - see, for example, Alexander Shand’s articulation of the problem in 1894:

The object of the present article is to point out an ambiguity in current psychological theories of attention. Through it, psychologists have often presented a confused view of their subject, true or false according to the interpretation of their words... (Shand 1894 p. 449).

And see, for another example, Britt Anderson’s articulation of nearly the same problem in 2011:

James’s famous phrase: ‘Every one knows what attention is’ is implicitly (often explicitly) invoked whenever researchers report work on attention without supplying a concrete definition. The presumption is that the researcher’s sense of attention will be clear from context and that James’ exhortation can be taken to imply more than it says, that is that everyone knows what attention is, and they all think it is the same thing. In fact, communal practice reveals that we do not. (Anderson 2011 p. 3, emphasis in original)

I think that in light of the troubled history of the study of attention that the two passages above gesture towards, we should take the risk of miscommunication due to equivocation extremely seriously. So, at the outset of any given investigation into intellectual attention,
just saying that intellectual attention is the intellectual or cognitive kind of attention, while leaving those terms unanalyzed, *won’t do*. We ought to begin with an account that is thicker than such a minimal proposal. The goal of this chapter is to provide such a proposal that is thicker than such a minimal proposal, and which enjoys some independent motivation.

As we will see, all of the extant proposals about how to define intellectual attention that I am about to criticize *do* manage to be thicker than such a minimal proposal, but shouldn’t be adopted for other reasons. On Daniel Stoljar’s (2004) view, we should define it as thinking; on Michael Martin’s (1997) and Ian Phillips’s (2012) view, we should define it as conscious thinking; on a common reading of William James’s (1890) view, we should define it as the attention directed at “internal”, or mental, objects. I will argue that most of these definitions are actually *too* thick, because accepting them unjustifiably rules out the investigation of apparently substantive questions about intellectual attention. Moreover, I’ll show that the arguments in favour of accepting these definitions are unsuccessful.

The positive proposal that I make will, accordingly, be *thicker* than the minimal proposal and yet *thinner* than any of the extant proposals. On my view, we should identify a relatively uncontroversial sufficient condition for intellectual attention. Then we should use this sufficient condition, rather than a definition, to study intellectual attention. As we will see, my approach directly parallels Wayne Wu’s (2014) recent project of identifying a relatively uncontroversial sufficient condition for perceptual attention.

Later in this chapter, I’ll discuss the full range of reasons to accept such a sufficient condition for perceptual or intellectual attention. But one initial point to note is that, in general, identifying sufficient conditions is less difficult than identifying necessary

\[20\] I discuss “thick” and “thin” as they apply to accounts of attention in more depth in Section 3.1.
conditions. Coming to a conclusion about a necessary condition for attention would require coming to a conclusion about every instance of attention. Coming to a conclusion about a sufficient condition for attention does not require coming to a conclusion about every instance of attention, and is compatible with pluralism about attention, or at least an openness to pluralism about attention (see e.g., Taylor 2015 for a pluralistic approach to attention).

2. The empirical sufficient condition for intellectual attention

As I’ll argue later in this chapter, studying intellectual attention while relying on one of the extant definitions would lead to various problems. However, an argument from Wayne Wu’s recent book, Attention (2014), can be used to generate a novel and superior method of studying intellectual attention. Wu, in a discussion of how we should study perceptual attention, says that we should sidestep the complex metaphysical issues involved in giving necessary and sufficient conditions for perceptual attention and instead just isolate one sufficient condition that everyone, or at least very many theorists, could agree on (2014 p. 39).

In the rest of this section, I’ll explain Wu’s sufficient condition for perceptual attention and why he endorses it, and then I’ll explain what an analogous sufficient condition for intellectual attention would look like, and what would motivate accepting such an analogous sufficient condition. Then I’ll explain in more depth why we should endorse my sufficient condition for intellectual attention.21

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21 This sufficient condition for perceptual attention is related to but not identical to Wu's account of the metaphysics of attention in general – that account is not under discussion in this chapter. One could take any account of the metaphysics of attention in general and then use it to generate a sufficient condition for intellectual attention. But that is not my approach to generating such a sufficient condition, because I think we should try to generate such a sufficient condition without taking on divisive metaphysical commitments.
Here’s Wu’s proposal for the perceptual case:

**Empirical Sufficient Condition for Attention (PS):** Subject S perceptually attends to X if S perceptually selects X to guide performance of some experimental task T, i.e. selects X for that task.

On this view, a subject has “perceptually selected” X if a subject uses information from a personal-level representation of X to guide performance of an experimental task (Wu 2014 pp. 80-82). Here’s an example of Wu’s view at work. Imagine that Sam is sitting at a table with an apple on it, and Sam’s experimental task is picking up the apple. Further, imagine that Sam goes on to take the action of grasping the apple on the basis of where it looked to be. In this case, then, Sam used information from her perceptual representation of the apple to guide their reach; therefore Sam perceptually selected the apple for the guidance of Sam’s reach; therefore Sam perceptually attended to the apple.

Here is how we can adapt Wu’s condition to the case of intellectual attention:

**Empirical Sufficient Condition for Intellectual Attention (IS):** Subject S intellectually attends to X if S cognitively selects X to guide performance of some experimental task T, i.e. selects X for that task.

To make use of this view we need to move beyond a merely intuitive understanding of “cognition”. In what follows, by “cognitive”, I will mean “stimulus-independent” (See Burge 2010 p. 378, Beck 2012 p. 586, and Beck ms. for discussion of this way of marking off cognitive processing from perceptual processing). A stimulus-independent mental representation does not require an active causal link with the object that it is about to continue existing. A visual representation of an apple is, therefore, stimulus-dependent, while a memory of an apple, is stimulus-independent.
Note that such a cognitive representation of the apple is, in a sense, dependent on the apple. But the sense in which it is dependent on the apple is attenuated and unimportant. You can't have a perceptual memory of an apple without having seen the apple first, and this is the sense in which many cognitive representation ultimately do depend for their existence on a stimulus. But the cognitive representation does not depend for its existence, in a moment-to-moment way, on an active causal connection with the apple. That is the sense in which the cognitive representation is stimulus-independent.

Cognitive selection, on this way of thinking, works just like perceptual selection. Here is a simple example: Sam is sitting at a table with an apple on it. Sam is instructed to look at the apple, close her eyes, and then to grasp the apple. Sam does so. In this case, it seems like Sam must have used information from a personal level representation to guide her reaching action, but the information was from a cognitive representation (probably a representation in working memory or long term memory), not a perceptual one. Therefore, Sam cognitively selected the apple, and therefore Sam intellectually attended to the apple. Similarly, if Sam is asked a week later about what colour the apple was, when Sam uses information from her longer term memory of the apple to answer the question, her use of information is sufficient for intellectual attention.

In distinguishing between perceptual kinds of processing and cognitive kinds of processing, I use “cognitive” to refer to the non-perceptual kind of mental processing, and not in the broader way that it is used when we say something like “the subject matter of cognitive science”, as I remarked in the introduction. Clearly, the subject matter of cognitive science includes perceptual processing as well as memorial processing. But there is also a narrower use of “cognitive”. Paradigm cases of this narrower kind of cognition include
deliberation, judgment, remembering, and imagination. There is a hard question to ask about how to precisely mark the question between perception and this narrower kind of cognition. But as Jake Beck (ms) has argued, the presumption that there is such a distinction between two kinds of mental processing is a reasonable one that’s shared by many philosophers and psychologists; and, moreover, the distinction that they seem to have in mind is the distinction between stimulus-dependent and stimulus-independent mental states.

Consider, for example, the debate about whether perception is ever “cognitively penetrated”.22 This is, very roughly, a debate about whether cognitive states, like beliefs, ever play a special and surprising role in determining the what it is like to have particular perceptual experiences. For example, according to one early argument purporting to show the existence of cognitive penetration, the beliefs that apples, hearts, and lips are red can cause apples, hearts, and lips to look like they are a darker shade of red than they really are (Delk & Fillenbaum 1965; see MacPherson 2012 for more recent discussion). The intelligibility of this long-standing debate about whether cognitive penetration actually occurs rests on the presumption of the theorists involved that there’s a distinction to be made between perceptual processing and cognitive processing. And the sense of “cognitive” here must be narrower than the sense at play in “the subject matter of cognitive science”.

Understanding cognition in terms of stimulus-independence is one such narrower way of understanding cognition. Moreover, some of the things that theorists engaged in this

debate say seem to suggest that the narrower sense of “cognition” they have in mind is really is “stimulus-independent. Fiona MacPherson, for example, explicitly categorizes the mental states we occupy while imagining, dreaming, and hallucinating as “non-perceptual” mental states (Macpherson 2012 pp 50-51).

There are two reasons I think it’s a good idea to analyze cognition in terms of stimulus-independence and perception in terms of stimulus-independence. First, it correctly categorizes the paradigm cases of cognition and perception that we discussed in the introduction to this chapter. That shows that it is an analysis that is in line with ordinary thought and talk about cognition and perception. In theorizing about the mind, an important virtue of understanding mental state terms in a way that is continuous with folk thought and talk about those terms is that such an understanding enables the science of the mind to be used to answer questions that the folk might articulate.

Secondly, as we’ll see when I analyze the practice of the study of intellectual attention, it is a way of understanding the demarcation between cognition and perception that seems to be in line with the way that many scientists seem to understand the demarcation. This method of understanding the demarcation is, therefore, a relatively uncontroversial one, and a method that allows my talk about cognition to pick out the same range of phenomena as many scientists’ talk about cognition. In general, it’s useful to use widely accepted accounts of mental state like “cognition” terms to reduce the risk of miscommunication through equivocation. As I’ll discuss below, many scientists have claimed that miscommunication through equivocation on the word “attention” has been a particular problem over the past hundred years. But we should be wary of the risk when it comes to words like “cognition”, as well.
In the rest of this chapter, I’ll argue that theorists that want to study intellectual attention should use my sufficient condition rather than one of the extant definitions. In the section below, I explain the positive reasons in favour of adopting the sufficient condition. Then, in the rest of the chapter, I explain the problems with all the extant proposals about how to define intellectual attention.23

2.1 The support for (IS)

First I will provide a partial account of how Wu motivates acceptance of (PS). Then I’ll give the argument for accepting (IS).

In short, Wu’s argument for accepting his sufficient condition for perceptual attention is that it seems to be implicitly presupposed by many psychologists when they come to conclusions about perceptual attention, and, moreover, that explicitly endorsing the sufficient condition that psychologists implicitly presuppose would be a good idea (Wu 2014 pp. 38-39).

The latter claim is where the most interesting argumentative work is being done. What motivates the latter claim is, I take it, that one obvious route to finding a relatively uncontroversial sufficient condition for attention is to identify a sufficient condition for attention that a large group of theorists already accept. Part of what motivates the former claim is Wu’s analysis of the inferences that psychologists make when studying perceptual attention in three research paradigms: dichotic listening, visual search, and spatial cueing. In short, an acceptance of (PS) seems to underlie many of the inferences these

23 The relationship between (IS) and some of Wu’s remarks about attention in thought is complex. In some earlier work Wu said that “conscious mental action is cognitive attention”, but more recently Wu has thought of cognitive attention in terms of selection for action (Wu 2013 p. 250; Wu 2014 p. 94). In his 2014, Wu thinks of attention in thought in terms of selection for action as a result of starting with an analysis of the practice of science to support (PS), and then gradually transforming (PS) into something more general. In this dissertation, I support (IS) just with an analysis of the practice of science.
psychologists make when they move from observations of behaviours to conclusions about the distribution of participants’ perceptual attention.

But even more importantly, Wu’s thought is such a method of justification of their inferences provides a unifying explanation of the inferences of psychologists who work in several different research paradigms. Unifying explanations of this kind are extremely valuable because they reveal that although these psychologists might on the surface appear to use the word “attention” in different ways, a large group of them are actually all using the word in the same way when it really matters – i.e., when they come to conclusions about attention (see Wu 2014 pp. 270-271). Endorsing such a theory of attention, therefore, goes along with being able to explain why we should resist the skepticism that some psychologists have about the progress of our collective study of attention.24

In the rest of this section, I’ll first explain how Wu argues that psychologists working on visual search seem to endorse (PS). Then I will go on to explain how work in a variety of experimental paradigms motivates the empirical sufficient condition for intellectual attention.

In the visual search paradigm, participants are instructed to press a button as soon as they see a pre-specified “target” object on a computer screen that is also displaying some “distractor” objects (here I follow Wu’s summary of the paradigm; see Wu 2014 pp. 19-21). Psychologists seem to take subjects’ responses, via button pressing, as evidence that subjects have perceptually attended to the target objects. Wu takes this to be a sign that the psychologists implicitly endorse his sufficient condition, because the subjects performing

24 See, e.g., Britt Anderson’s paper “There is no such thing as attention” (2011), which I have cited above, for a representative example of this kind of skepticism
the task seem like they were using information from perceptual representations of target objects to guide the performance of their task of button pushing. According to (PS), that use of information is sufficient for perceptual attention to the target objects (Wu 2014 pp. 38-39).

Now we can move on to the empirical support for the claim that psychologists implicitly endorse (IS). I’ll discuss the inferences made by psychologists working in the “refreshing paradigm”, the “retro-cue paradigm”, and the “n-back paradigm”. I will argue, like Wu, that it seems like an implicit acceptance of (IS) would justify the inferences some psychologists make about attention on the basis of the observed behaviours of their subjects. The posit that they implicitly accept (IS), therefore, provides a unifying explanation of what justifies the conclusions that this diverse set of psychologists comes to about intellectual attention.

In the simplest version of the refreshing paradigm, subjects see a series of words on slides, one at a time, interspersed with the occasional slide that displays a single black dot. They are instructed to read aloud the words that they see, and to think of (“refresh”) and say the previous word they saw when they see a black dot. Here is an example of what a series of slides in the refreshing paradigm look like:

![Figure 2: The refreshing paradigm](image)
Psychologists seem to think that when subjects successfully respond to the black dots, the subjects have attended to the previous word that they saw. (IS) clearly provides one justificatory route from the subjects’ observed behaviours to the psychologists’ conclusion. It seems like, in this paradigm, subjects must have used information from cognitive representations of the previous word they had seen to guide their performance of the “respond to a black dot” task. According to (IS), that is sufficient for intellectual attention to the previous words they saw.

Secondly, in a simple version of the retro-cue paradigm, subjects see a slide with four differently coloured Xs on each slide, each in a different corner of the slide. Then participants see a slide which either has a cue that points to where one of the Xs used to be (call this the informative condition) or a neutral cue that points in all four directions (call this the neutral condition). Then, on the final slide, a coloured X is presented. Subjects press a button indicating whether an X of that colour had been present on the initial slide.

Here is an example of what a series of slides from the informative condition of retro-cue paradigm looks like:

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25 See Johnson et al. (2002 p. 64) for this task, and Johnson et al. (2005 p. 340) for the explicit assertion that ‘refreshing’ (which is required by responding to the dot) entails attention. For more work in the refreshing paradigm see, e.g., Raye et al. (2002), Chen & Cowan (2009), Higgins & Johnson (2009), and Johnson et al. (2013). Note also that, in general, scientists studying attention do seem to think that completing the task successfully is sufficient for attention, and are more skeptical about coming to conclusions about attention on the basis of shoddy or incomplete task performances. In the second chapter, I revisit this point, argue that it should motivate us to endorse a refined version of Wu’s sufficient condition for perceptual attention, as well as a refined version of my analogous sufficient condition for intellectual attention.
In this paradigm, it turns out that subjects respond more quickly in the informative condition than in the neutral condition. Psychologists seem to take this to be evidence that the subjects attended to the cued X in response to the cues.\textsuperscript{26} (IS), again, provides one justificatory route from the subjects’ observed behaviours to the psychologists’ conclusions. It seems like subjects, in responding to a cue, must have used information from a cognitive representation of the initial slide to guide their performance of the “make sure to remember the cued X” task (a subtask in the overall task of “responding correctly to the query that will eventually come”). By (IS), that is sufficient for intellectual attention to the cued region of the initial slide.

Lastly, consider the $n$-back paradigm. Participants in the $n$-back paradigm see a series of letters one by one. The task is to press a button when the $n$-th back letter in the series is identical to the letter that they are currently viewing (call such a letter a “target letter”). The set of slides below is an example some slides from the 3-back condition – for expository purposes, the “target letters” are outlined rather than solid. The idea is that a

\textsuperscript{26} See, e.g., Astle et al. (2012) p. 149 for the task and p. 151 paragraph 4 for the inference. See also Griffin & Nobre (2003), Lepsien et al. (2005), Matsukura et al. (2007), and Makovski et al. (2008), for more examples of work in the retro-cue paradigm.
participant looking at any of the outlined letters ought to press a button to indicate their awareness that the outlined letters are identical to the letters on the third slide back.

![Figure 4: The n-back paradigm](image)

Participants complete the n-back task more rapidly and accurately in the 1-back condition than in the other conditions. Many psychologists explain this discrepancy between reaction times by saying that in the 1-back condition, subjects can respond as quickly as they do because they were already attending to the previously seen 1-back letter, and can immediately compare it to the currently seen letter. By contrast, for subjects in the 2-or-more-back condition, some additional processing of some sort (e.g. retrieval from memory) must go on before subjects can attend to a previously seen letter so as to compare it to a currently seen letter.27

Again, (IS) shows us how the observed behaviours of the subjects can be used to justify the psychologists’ conclusions. It seems like subjects in the 1-back task must have used information from their cognitive representations of previously seen letters to

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complete the ‘respond to 1-back target letters’ task. Similarly, it seems like subjects in other versions of the task must have used information in just the same way after doing some extra work first (on the view of many psychologists working with the n-back paradigm, this extra work is bringing the letters to mind, or remembering them). By (IS), those two ways of responding to target letters are both sufficient for intellectual attention to target letters.

(IS), therefore, appears to be endorsed by a wide variety of psychologists working in a variety of different research paradigms. (IS), moreover, gives a unifying explanation of these psychologists’ conclusions; i.e., it allows us to say that these psychologists are all actually talking about the same phenomenon, despite outward variation in the details of what they have to say about what “attention” means. This is a very compelling pair of reasons to endorse (IS).28

In the rest of this chapter, I’ll briefly discuss some of the alternative proposals about how we should think about intellectual attention, and present my arguments that they are not as attractive as my own, novel proposal.

3. The first alternative – intellectual attention as thought

Daniel Stoljar, in his paper “The Argument from Diaphanousness” (2004), argues

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28 Watzl (2011b) and Taylor (2015) have argued that, at least in some cases, using information to guide the performance of a task seems insufficient for attention. Fully addressing what's wrong with this objection would take us too far afield in this chapter. In short, the core problem with the criticism is that it does not distinguish between the performance of an experimental task and an ordinary, day-to-day task. In the study of attention, experimental tasks are designed in ways that ensure that they can only be completed attentively. Developing (IS) into a sufficient condition that applies outside of experimental contexts and which avoid s this criticism is possible, but such a development is not a goal that I pursue within the scope of this chapter.
that intellectual attention to an object just is thinking about that object. This definition does correctly categorize the attention in cases (A), (B), (C), and (D) in the introduction of this chapter, because (C) and (D) describe subjects thinking about objects. But there is a problem with Stoljar’s argument in favour of this proposal. He argues that we should accept his definition just because it makes sense of the following two ordinary uses of the word “attention”:

(1) ‘Let us now attend to the second flaw of the argument.’

(2) ‘The program made us attend even more than we had before to the effects of salination on the nation’s rivers.’

As Stoljar observes, “attend to”, in the above two sentences, might just mean ‘think about’ (2004 p. 374). Making sense of these ordinary-language claims does not obviously require positing that intellectual attention to an object is anything over and above thought about an object. But even if we accept that Stoljar’s theory explains the two ordinary-language samples above, his approach to defining intellectual attention is far too quick.

Consider, again, cases (C) and (D) from earlier in this chapter. According to case (C), the speaker does not just consider hazards – the speaker attentively considers hazards. Case (D), similarly, refers to attentive thought about armed uprisings – not mere thought about them. So what (C) and (D) show us is that the folk notion of thought allows for (at least) two modes of thought: the attentive way of thinking and the inattentive way of thinking.

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29 Stoljar calls intellectual attention “cognitive attention”, but I will use my own terminology in this chapter to keep things simple. My reasons for using “intellectual attention” are just that it seems to be the earliest term used to refer to the phenomenon under discussion (James’s 1890 distinction between perceptual attention and intellectual attention is the earliest use of the term that I discuss in this chapter).
On such a view, when we think about an object we do sometimes think attentively - but we might just as readily engage in *inattentive* thought about the object. Consider, to illustrate this point, Christopher Mole's description of a devoted but tired scholar:

“...the devoted scholar who has spent too long at his desk. His reading of the book before him is prompted by genuine interest, but having spent the whole day trying to ignore the pangs of hunger, the children in the next room, and the radio that is playing downstairs, he is no longer able to concentrate. His reading is prompted by interest, but it is not attentive.” (Mole 2011 pp. 48-49).

Mole description of the case seems apt: there seems to be an inattentive mode of thought as well as an attentive mode of thought, and the scholar is failing to engage in the attentive mode of thought.

What all this shows is that Stoljar’s definition of intellectual attention is at odds with the folk notions of thought and attention. But his claim was that we should accept his definition of intellectual attention *just because* it seemed to be the folk notion of intellectual attention! So even if we grant the (contentious) assumption that we should accept a definition of intellectual attention just because it seems to be the folk notion of intellectual attention, Stoljar’s argument is unsuccessful. There are simply more ordinary uses of “attend” than he considers.30

**The second alternative – intellectual attention as conscious thought**

Ian Phillips (2012), following Michael Martin (1997), argues that what distinguishes intellectual attention from perceptual attention is that the former simply is our stream of conscious thought, while the latter is a modification of our streams of conscious

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30 I take the folk notions of thought and attention to be the set of platitudes about the causal roles of thought and attention that we would all endorse rather than to a set of psychological capacities – see Stich and Nichols (2003) for a discussion of this distinction.
This way of distinguishing between perceptual attention and intellectual attention can be used to generate a definition of intellectual attention – “conscious thought”.

Phillips's and Martin's definition of intellectual attention, like Stoljar's, will correctly categorize the cases with which I began this chapter: (A) and (B) do not describe instances of conscious thought, whereas (C) and (D) do describe instances of conscious thought. Nevertheless, I will argue that we should not accept their definition. One problem with it is the purely introspective argument that they offer in its favour, but an even more important problem with accepting their definition is that it would unjustifiably preclude investigation into a substantive question that should be left open by a mere definition of intellectual attention.

This specific methodological problem with their view is a result of a more general feature of their view: Martin's and Phillips's definition of intellectual attention puts us in a poor position to begin a combination of a “conceptual inquiry” and a “descriptive inquiry”

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31 Phillips calls intellectual attention “internal attention”; I’ll use my own terminology in this chapter to keep things simple. Martin just uses the word “attention”, but it is clear from the context that he is discussing intellectual attention.

32 Throughout, I discuss phenomenal consciousness rather than what Block (1995) has called “access consciousness”. Note also that to say that there is conscious thought is not to make the presumption that there is a sui generis phenomenology of thought (see Pitt 2004 for a defense of such a view and Tye & Wright 2011 for a criticism of such a view). It is just to say that sometimes there is something it is like to think.

33 The problem with their positive argument for their view is that it rests on introspective judgments that other philosophers have disagreed with – that is, according to other philosophers, it seems as though conscious perception and conscious thought can be structured into a foreground and background. Recall, e.g., Elijah Chudnoff’s description of the phenomenology of performing a geometrical proof (Chudnoff 2013, pp. 717-718), which I quoted in full in the introduction of the dissertation.
into the nature of intellectual attention – what I will call a “blended inquiry”.

First I’ll discuss the distinction between conceptual inquiries and descriptive inquiries, and then I’ll explain why their definition of intellectual attention puts us in a poor position to begin such a blended inquiry into the concept of intellectual attention.

First, we can distinguish between two kinds of conceptual inquiries. In the first kind, we try to figure out what the folk think the analysis of a concept is. In the second kind, an individual tries to figure out what her own analysis of the concept should be. In the former kind of conceptual inquiry, we try to come to understand how a given population of people understand a concept, while in the latter kind, we do things like use intuitions that an individual has about cases to guide us in forming our analysis. For a deeper discussion of this distinction between these two kinds of conceptual inquiry see, e.g., Paul Grice’s discussion of the distinction between what he calls “Oxonian” and “Athenian” dialectic in his book Studies in the Ways of Words (1989, pp. 380-381). Unsurprisingly, “Oxonian” dialectic refers to the first kind of conceptual inquiry, “Athenian” the second.

Note that Stoljar’s inquiry into the concept of intellectual attention was something like a very quick conceptual inquiry of the first kind. However, as I have already shown, a more careful conceptual inquiry of the first kind does not actually yield his definition of intellectual attention. The folk analysis of ‘intellectual attention’ must be more complex than Stoljar thinks it is.

Descriptive inquiries, by contrast, are inquiries that involve empirical investigation. Rather than making the analysis of a concept more complete through the methods we use

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34 See Haslanger (2004) for this distinction between kinds of inquiries and a different application of the distinction.
to perform conceptual inquiries (e.g. reflective equilibrium), in a descriptive inquiry we make our analysis more complete by making empirical discoveries. The empirical discoveries in question would, of course, be discoveries about something other than what the folk think about the concept: otherwise we would be performing an Oxonian conceptual inquiry.

The successes of cognitive science have shown that it is fruitful to study mental processes using an interdisciplinary methodology. So our investigation of intellectual attention should be informed (at least!) by both philosophy and psychology. Using the terms I have just introduced above, one might say that our inquiry into intellectual attention should be partly descriptive, because psychologists deepen our understanding of concepts by making empirical discoveries, and partly conceptual, because philosophers engage in conceptual inquiries (not to say that this is all philosophers do – philosophy admits of a wide variety of methodologies). The definition of intellectual attention that we adopt should, accordingly, be one that is well suited to being the starting point for such a blended inquiry into the concept of intellectual attention.

What makes a definition well suited to being the starting point for such an inquiry? Potentially many properties of the definition, but there are just two properties that I will keep in mind in this chapter. First, such a definition should be thick enough to allow us to properly get a grip on the phenomenon of intellectual attention - i.e., a definition that puts us in a position to identify the phenomenon in the world and to have substantive debates about its nature. Second, such a definition should also be thin enough to leave room for us to deepen our understanding of the phenomenon through engaging in philosophical and psychological work.
A problem with accepting Martin’s and Phillips’s definition of intellectual attention is that it appears to close off the investigation of an apparently substantive question. To use the terminology I just introduced, their definition is too thick. Consider the question of whether there could be such a thing as unconscious intellectual attention. Phillips’s and Martin’s definition of intellectual attention rules out the investigation of this question, because according to their definition attention – both perceptual and intellectual - is always conscious.

But there is currently a substantive debate about whether there can be unconscious attention, or whether attention is always conscious: see e.g., Koch and Tsuchiya (2007), Kentridge (2011), Norman, Heywood, & Kentridge (2013) and Mole (2014) for arguments that there is unconscious attention, and Mole (2008), Smithies (2011) Watzl (2011) for arguments that there is only conscious attention. The mere existence of this dispute is compelling evidence that the question of whether there can be non-conscious intellectual attention should not be settled by our definition of intellectual attention. It should, instead, be settled through philosophical and psychological inquiry.

3. The third alternative – intellectual attention as “internal”

Marvin Chun, Nicholas Turk-Brown, and Julie Golomb (2011), as well as and Kristina Backer and Claude Alain (2014), have suggested that intellectual attention is the attention directed at internal objects, where “internal objects” are taken to be certain mental states, like trains of thought. They say that William James proposed this definition in his Principles.

35 The current debate has focused on perceptual attention and perceptual consciousness rather than intellectual attention and cognitive consciousness, but I think we should expect an analogous debate to emerge in the discussion of whether we can intellectually attend to something without being cognitively conscious of it.
of Psychology (Chun et al. 2011 p.75; Backer and Alain, p. 439). In this section, I’ll argue that there are actually two different readings of James’s view available, but that neither of them offers a satisfactory definition of intellectual attention.

In the Principles of Psychology, James defined perceptual attention as the attention directed at “sensorial objects” and intellectual as the attention directed at “ideal or represented objects” (1890 p. 416). Chun et al. seem to have taken “ideal or represented objects” to be interchangeable with “internal object”, an interpretation which is perhaps bolstered by some of James’s later remarks in the chapter, such as “… when the attention is of the intellectual variety … the thing attended to then is nothing but an idea, an inward reproduction or conception” (1890 p. 439).

But on the other hand, even if we take “ideal object” to mean “internal object”, we should be more careful than the contemporary psychologists are in interpreting James’s claim that intellectual attention can also be directed at “represented” objects. That seems to leave open the possibility of intellectual attention to represented but external objects. And it certainly seems as though James expresses the belief that intellectual attention can be directed at the subject matter of a thought rather than the thought itself in the passage below:

“The conditio sine quâ non of sustained attention to a given topic of thought is that we should roll it over and over incessantly and consider different aspects and relations of it in turn” (James 1890 p. 423).

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36 Chun et al. use the term “internal attention”, and Backer and Alain use the term “reflective attention”, but they all assert that they mean to mark the same distinction that James did with the term “intellectual attention”. To keep things simple, I will only use the term “intellectual attention” in this section.

37 See also Peacocke 1998 p.66 for this interpretation of James’s view.
Given the evidence both for and against attributing the “internal object” view to James, it seems pointless to try to pin the view on him for certain. What is of primary interest to us at present are the merits of various possible accounts of intellectual attention, so for the rest of this section I will set the interpretative issues aside. I think that the definitions James offers on both interpretations of his statements in the *Principles* face problems. I’ll discuss them in turn.

First, consider the view that intellectual attention is the attention directed at “internal” objects. Such a view fails to identify cases (C) and (D) as cases of intellectual attention, because (C) and (D) refer to attentive conscious thought about external, non-mental objects – e.g. hazards and armed uprisings. This failure seems to be a result of the fact that such a definition is not *really* a definition of intellectual attention – it is actually a definition of what some researchers have more recently called “introspective attention” (e.g. Gertler 2001, Siewert 2012 and Wu 2014 pp. 255-260).

Introspective attention is certainly worth investigation. But it seems to me that introspective attention is best understood as a species of intellectual attention, just as visual attention is best understood as a species of perceptual attention. It’s plausible to think that we are able to judge attentively, plan attentively, remember attentively, etc., *as well as* introspect attentively. Beginning our investigation of attention by contrasting perceptual attention with introspective attention, as James does on this interpretation of his view, runs the risk of erasing from our discussion the broader kind of non-perceptual attention that includes but is not limited to introspective attention.

The second way of interpreting James, however, leads to an actual proposal about how to define intellectual attention. On this interpretation, intellectual attention is the
attention directed at internal objects or represented external objects. But it seems to me that this definition is too thin, because it leaves “attention” entirely unanalyzed. But leaving “attention” unanalyzed would run the risk of theorists miscommunicating about intellectual attention, as I have argued above. I agree with Anderson that we should not rely on the presumption that everyone means the exact same thing by “attention”, and that in giving a sufficient condition for intellectual attention, or a definition for intellectual attention, we should not use the word “attention”. So we cannot accept James’s definition of intellectual attention on either interpretation of his view.

6. Conclusion

In this chapter I set out to accomplish two main goals. The first was to establish a sufficient condition for intellectual attention, according to which using information from a cognitive representation of an object to guide the performance of a task is sufficient for intellectual attention to that object. I argued that accepting this sufficient condition is motivated by the practice of scientists working in the refreshing, retro-cue, and $n$-back paradigms, and enables us to resist skepticism about whether there really is such a thing as intellectual attention (in this case, intellectual attention in particular rather than attention in general). The second was to provide some support for my sufficient condition through criticizing the extant proposals about how to define intellectual attention. All of the
definitions I reviewed were either proposed on the basis of unsuccessful arguments, were poor definitions on methodological grounds, or both.  

Before fully endorsing the claim that (IS) is superior to any of the extant accounts of intellectual attention we should pause to consider the question of whether it faces the problems that I have charged the extant accounts of– the problems of being too thin or too thick. (IS) is not too thin because it does not leave “attention” entirely unanalyzed. As we have seen, according to (IS) the facts about which experimental tasks a subject is engaged with fix the facts about which objects the subject is directing her attention towards. Moreover, (IS) is not too thick because it does not require that we make divisive presumptions about the metaphysics of attention. That’s because (IS) does not rule out that some other phenomena might count as intellectual attention. (IS) just provides one possible method for justifying claims about when a phenomenon counts as intellectual attention.

Determining whether there are any such instances of intellectual attention not identified by (IS) is certainly an interesting question for further research. But the real methodological upshot of endorsing (IS) is that it will enable us to move past the question of deciding what counts as intellectual attention, and instead put us in a position to ask questions about intellectual attention’s properties and effects.

In the next chapter, however, I will refine (IS) before moving on to asking and answering some of those further questions. In the next chapter, I’ll point out that while (IS)

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30 Phillips, Martin, and Stoljar might want to suggest that we use their views to generate sufficient conditions for intellectual attention, rather than definitions. But this proposal does not seem tenable. Recall Mole’s distracted scholar, who seemed to be engaging in some conscious inattentive thought. Such an example shows that we should not adopt the proposal that thought is sufficient for intellectual attention, and that we should not adopt the proposal that conscious thought is sufficient for intellectual attention.
is superior to the extant accounts of intellectual attention, looking even more closely at the practice of science gives us a reason to endorse a refined version of the sufficient condition, according to which only some of the uses of information from cognitive representations to guide the performances of experimental tasks are sufficient for intellectual attention.
Chapter 2: Refining the Sufficient Condition

Abstract

In the previous chapter I presented and motivated a sufficient condition for intellectual attention, (IS). The argumentative strategy I used in support of (IS) was the same as the argumentative strategy Wayne Wu (2014) used to motivate his sufficient condition for perceptual attention. In short, the advantages of (IS) were that it seemed to be tacitly endorsed by many scientists when they made conclusions about intellectual attention, and that endorsing (IS) comes along with being able to give an explanation of why it is that many of the psychologists studying attention who appear to be talking about a wide range of phenomena are actually talking about a single phenomenon.

In this chapter I present a problem for (IS). I show that (IS) is, intuitively, too broad. That is, there are some cases of mental states that we intuitively do not categorize as intellectual attention that (IS), nevertheless, categorizes as intellectual attention. While (IS) is, as I argued in the first chapter, clearly superior to the extant accounts of intellectual attention, this is still a problem for it that needs to be addressed.

I do that by looking in some further depth at the practice of science, and showing that while (IS) is compatible with the inferences about attention that many psychologists and psycholinguists make, there’s also evidence that they actually endorse a more refined version of (IS) that captures the right range of cases. I argue that endorsing the refined version of (IS) is the way to go. I think it provides a more accurate picture of the beliefs about attention that underlie the scientific study of attention.

On my view, only some uses of information from cognitive representations to guide the performances of tasks are sufficient for intellectual attention. The uses in question are the uses that are for the sake of guiding an agent’s primary tasks rather than one of her secondary tasks. I use the notion of “cognitive resources” and a “task-relevant set” of cognitive resources to explain the distinction between primary and secondary tasks. The task-relevant set of cognitive resources for a task are the cognitive resources that an agent could gainfully allocate to the performance of the task. A task is primary for an agent if she allocates all or most of the resources in the task-relevant set to the performance of the task.
Chapter 2

0. Introduction

In the previous chapter I presented and motivated a sufficient condition for intellectual attention, which I will state again here:

(IS): Subject S intellectually attends to X if S cognitively selects X to guide performance of some experimental task T, i.e. selects X for that task.

Here, again, is a simple example of this sufficient condition at work: Sam is sitting at a table with an apple on it. Sam is instructed to look at the apple, close her eyes, and then to grasp the apple. Sam does so. In this case, it seems like Sam must have used information from a personal level cognitive representation to guide her grasping. Therefore, Sam cognitively selected the apple, and therefore, by (IS), Sam intellectually attended to the apple. Similarly, if Sam is asked a week later about what colour the apple was, when Sam uses information from her longer term memory of the apple to answer the question, her use of information is also sufficient for intellectual attention to the apple.

The argumentative strategy I used in support of (IS) was the same as the argumentative strategy Wayne Wu (2014) used to motivate his sufficient condition on perceptual attention, (PS), which I still state again here for convenience:

(PS): Subject S perceptually attends to X if S perceptually selects X to guide performance of some experimental task T, i.e. selects X for that task (Wu 2014 p. 39).

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39 See Chapter 1 pp. 27-30 for a discussion of the demarcation between perception and cognition.
In short, I argued that (IS) seemed to be just as well motivated by the practice of science as (PS), and that endorsing it comes along with being able to give an explanation of why it is that many of the psychologists studying attention who appear to be talking about a wide range of phenomena are actually talking about a single phenomenon. I argued that the latter reason was an especially compelling one because it allows us to resist the skepticism some psychologists have expressed about the extent to which scientists studying attention are really all studying the same kind of phenomenon (again, see, e.g., Anderson 2011 for an example of this skepticism).

In this chapter I raise a problem for both of the sufficient conditions. I argue that they are both too broad. First I’ll present the problem at an intuitive level, and then I’ll present it as it emerges in the practice of science. One of the reasons for my approach is to completely present the range of problems that the sufficient conditions face. But even more importantly, a second reason for this approach is to address, in advance, the objection that an adherent of (PS) or (IS) ought not be moved by intuitions about cases. I will show in this chapter that refining the sufficient conditions is motivated by both intuitive and scientific considerations.

Lastly, in the final section of the chapter, I’ll show how looking further at the practice of science can show us how to address the problem through refining both sufficient conditions for attention. On the view that I develop, only some of the uses of information from personal level representations of objects to guide the performance of a task are sufficient for intellectual attention – the uses of information that are for the sake of guiding the performance of an agent’s primary tasks rather than her secondary tasks.
I use the notion of “cognitive resources” and a “task-relevant set” of cognitive resources to explain the distinction between primary and secondary tasks. The task-relevant set of cognitive resources for a task are the cognitive resources that an agent could gainfully allocate to the performance of the task. A task is primary for an agent if she allocates all or most of the resources in the task-relevant set to the performance of the task.

As we’ll see later in the chapter, one of the core motivations for this view is that scientists studying attention don’t seem to think that uses of information from cognitive representations to guide the performances of secondary tasks are sufficient for intellectual attention. Instead, they seem to think that a subject needs to be taking a task more seriously than that for her uses of information to be sufficient for intellectual attention – i.e., that uses of information from cognitive representations to guide the performances of primary tasks are sufficient for intellectual attention.

1. The intuitive version of the problem

According to the sufficient conditions, “selection” is sufficient for attention. “Selection” is a technical term. As I explained in the first chapter, I understand selection in the same way that Wu does: a subject has selected X for some experimental task T if the subject uses information from a personal-level representation of X to guide performance of T (Wu 2014 pp. 80-82). The basic problem with both of the sufficient conditions is that sometimes agents seem to be selecting more objects than they are directing their attention towards. Therefore, both sufficient conditions count certain mental states as instances of attention, even though it seems clear that the mental states in question are not instances of attention.
This problem has not gone unnoticed in the recent literature on the metaphysics of attention – here is Sebastian Watzl’s take on the problem:

The account of attention as conscious selection for action and reasoning should be rejected. The main reason is that conscious selection of something as target for reasoning and bodily action is not sufficient for conscious attention. Consider the following. While engaged in a conversation over dinner and while your (perceptual) attention is focused on your conversational partner you might reach for your glass to drink. You might be aware of your reaching as well as being peripherally conscious of the glass. Furthermore, you are selecting the glass as the target of a bodily action. This is, therefore, a case of consciously selecting the glass as the target for bodily action. Yet, you can do this without focusing your conscious attention on the glass. There may be attentional processes involved in your reaching for the glass, but you need not be consciously attending to the glass.

Similarly, consider coming home and switching on the light in a familiar room. Again you might be peripherally conscious of switching on the light (as well as being peripherally conscious of the switch). Furthermore, you are selecting the light switch as the target of your bodily action. But again, in a case like this your act of switching on the light might be so automatic that your attention need not be focused on the light switch. Similarly, you might find yourself reasoning about what you are not attending to. While certain forms of reasoning might constitutively imply attention, others do not. While your perceptual attention is focused on your conversational partner, a conscious thought about the glass in your hand might occur to you. You are consciously selecting the glass as target of your reasoning but you are not attending to it. These counterexamples show that consciously selecting something as the target of reasoning and bodily action is not sufficient for conscious attention. (Watzl 2011a pp. 154-55).

I think that this passage raises a genuine problem that should motivate us to refine (but not to abandon) both sufficient conditions. However, there are two complicating factors that need to be acknowledged before we can appreciate the sense in which Watzl’s cases are genuine problems for the sufficient conditions.
Firstly, Watzl frames his cases as a problem for the theory that attention *just is* conscious selection for the guidance of action and reasoning, which is not quite the theory that has been under discussion so far. A merely sufficient condition like (PS) or (IS) is far less committal about the metaphysics of attention. Indeed, as I’ve argued, that fact is one of the primary reasons for endorsing (PS) and (IS). But it should be clear that despite the way in which Watzl frames his point, his objection *does* raise a problem for (PS) and (IS). His point is that, at least sometimes, selection for action seems *insufficient* for attention. And so his point problematizes the two empirical sufficient conditions for attention just as much as it problematizes the view about the metaphysics of attention that he has in mind.

Secondly, (PS) and (IS) refer to subjects performing *experimental* tasks, i.e., tasks that they are instructed to perform in a laboratory. Watzl’s cases describe subjects in a more natural environment. So saying that Watzl’s case seems to be a problem for the sufficient conditions requires presupposing that there’s no genuine barrier to dropping the word “experimental” from both sufficient conditions, which refer to subjects using information to guide the performances of *experimental* tasks. This is a presupposition that Wu would agree with. When considering the distinction between experimental tasks and other kinds of tasks, he says that “[it] seems unduly narrow, however, to restrict the notion of a task in the sufficient condition [for perceptual attention] to these specific experimental paradigms.” (Wu 2014 pp. 83-84).

In much of what follows, I’ll follow Watzl and Wu in effectively dropping “experimental” from the phrase “experimental task” in both sufficient conditions. But in the final section of the chapter, where I describe how we should refine the sufficient conditions, I will address the sense in which this move is actually a mistake, and argue that
there is actually an important distinction between an experimental task and a non-experimental task. As I’ll argue, psychologists studying attention do not think that just any use of information to guide the performance of a task is sufficient for attention. On my view, they think that uses of information to guide the performances of tasks that participants are taking seriously are sufficient for attention.

With those two caveats in hand, we can move on to discussing why Watzl’s cases show that both of the sufficient conditions seem too broad. (PS) and (IS) both say that a subject’s using some information from a personal level representation to guide the performance of a task is sufficient for either perceptual or intellectual attention. So if there are cases where a subject seems to be using information from a conscious perceptual or cognitive representation to guide the performance of a task, but in which the subject does not seem to be attending to the object that one of those representations is about, then we have a counterexample to either (PS) or (IS).

Watz’s cases do fill in that schema for generating a counterexample. As he suggests, it seems like we can attend to a conversation, and during that conversation, pick up a cup and take a sip from it, while never attending to the cup. Similarly, it seems possible that while you attend to a conversation, you might think about the cup, but that you could manage to do so without the cup actually engaging your attention – the thinking might have occurred merely at the “back” of your mind. But picking up the cup, and thinking about the cup, do require using information from a personal level representation of the cup to guide the performance of a task, so the sufficient conditions say that both of those uses of information to guide the performance of a task are sufficient for attention. In general,
endorsing the sufficient conditions comes along with a difficulty in explaining what it could be to perform a task without, in so doing, attending to some object.40

It is possible to argue that Watzl’s counterexamples should not actually motivate us to change our theory of attention. One method of replying to counterexamples like these is to say that (PS) and (IS) are driven by the practice of science, and not whatever intuitions about attention that the folk might be unfortunate enough to have. On this way of thinking, all Watzl’s cases show us is that a consequence of the best theory of attention is that we should try to revise some of our intuitions about attention. There are a two primary reasons that this method of reply is unsatisfying. I’ll discuss them in turn.

The first reason is that Alan Allport, a psychologist that Wu credits with being one of the first adherents of view that attention is tightly connected with selection for action, would probably agree with Watzl’s basic critical claim.41 That is, Allport would probably agree that in some cases, using information from a representation to guide the performance of an experimental task seems insufficient for attention. Consider this passage where Allport describes “decoupling”:

“Many fruit are within reach, and clearly visible, yet for each individual reach of the hand, for each act of plucking, information about just one of them must govern the particular pattern and direction of movements. The disposition of the other apples, already encoded by the brain, must be in some way temporarily decoupled from the direct control of reaching, though it may of course still influence the action, for example as representing an obstacle to be reached around, not to be dislodged, and so on. The same necessity of selecting, in respect of a given class of action performed by a given effector system, just one among a number of physically available

40 The unmodified sufficient condition for intellectual attention, therefore, faces the same problem that Stoljar’s account of intellectual attention did: neither can account for inattentive task performances. However, the unmodified sufficient condition for intellectual attention is better motivated than Stoljar’s account of intellectual attention, which was based on a small sample of ordinary talk about intellectual attention.
41 See Wu 2014 pp. 76-83 for Wu’s interpretation of Allport.
objects to act upon, appears to be essentially universal ... Although the senses are capable of registering many different objects” (Allport 1987 pp. 396-7).

What this passage shows is that Allport thinks that there are various ways a subject can use information from the representation of an object to guide the performance of a task that are insufficient for attention (e.g., when the subject uses information from one which is represented as “to be reached around” rather than to be reached). This fact at least complicates the claim that deference to the practice of science gives us a reason to resist refining the sufficient conditions. Indeed, what the passage above suggests is that a closer analysis of the practice of science will reveal that what scientists actually endorse is a refined version of the sufficient conditions.

The second reason is that refining (IS) will allow us to resolve an interpretative dilemma about how to understand the way some scientists study intellectual attention. The dilemma is this: either we interpret these scientists as endorsing (IS), or we do not. If we interpret them as endorsing (IS), then we need to reject a great deal of their core claims about attention. But if we don’t interpret them as endorsing (IS), then it’s not obvious how their experimental designs rule out the possibility that participants used inattentive cognition to complete some of their tasks. The core motivation for this horn of the dilemma is that it is, in general, a live possibility that any task completion was enabled by a participant’s use of some inattentive mental processing as opposed to a participant’s use of some attentive mental processing.

I’ll argue that the way out of the dilemma is to attribute a refined version of (IS) to these scientists, which is compatible with their core claims about attention, and also puts
us in a position to explain why their experimental observations really support for their conclusions about attention.

First I’ll discuss how this problem emerges in the interpretation of Marcia Johnson’s “refreshing” paradigm, which she uses to study what happens when subjects are instructed to think about recently seen objects that are no longer visible. Then I’ll discuss how the problem emerges in Brian McElree’s and Matthew Wager’s work on the capacity of attention, and the role that the capacity of attention plays in the comprehension of speech.

2. Marcia Johnson on intellectual attention

Marcia Johnson and various colleagues, beginning in 1983 with the book chapter “MEM: a multiple-entry, modular memory system” and up until the present day in their forthcoming paper “Electrophysiological correlates of refreshing”, have extensively studied one particular kind of intellectual attention through studying a mental process that they call “refreshing”. On Johnson’s view, when participants are instructed to think about a recently seen but now absent object, the participants – if successful in following the instruction - intellectually attend to the object by “refreshing” their representation of the object (Johnson et al. forthcoming p. 1)42. Although Johnson et al. do not put it in these terms, a useful philosophical way of characterizing the view is as follows: it is a view according to which the personal level process of intellectually attending to an object (in at

42 They use the term ‘reflective’ rather than ‘intellectual’, but make clear that they intend to be making the same distinction as James.
least some cases) supervenes on the sub-personal level process of refreshing the representation of that object.\textsuperscript{43}

Here I repeat a paragraph from the first chapter of this dissertation to give a more detailed explanation of what “refreshing” is. In the simplest version of the refreshing paradigm, subjects see a series of words on slides, one at a time, interspersed with the occasional slide that displays a single black dot. They are instructed to read aloud the words that they see, and to think of (“refresh”) and say the previous word they saw when they see a black dot. Here is an example of what a series of slides in the refreshing paradigm look like:

![Figure 5: the refreshing paradigm](image)

Psychologists seem to think that when subjects successfully respond to the black dots, the subjects have attended to the previous word that they saw.

Thinking about something is a relatively minimal task - perhaps it is even a basic cognitive action, as Johnson et al. have claimed (2005 p. 304). But despite that, Johnson and

\textsuperscript{43} Johnston et al. are somewhat inconsistent on whether the relationship here is one of identity or supervenience. Because it seems to me that refreshing is a sub-personal process but attending is a personal one, I take the supervenience interpretation to be the more charitable interpretation, and assume that the supervenience interpretation is correct throughout this paper.
her colleagues have shown that refreshing can have some significant functional, epistemic, and phenomenal upshots. Refreshing a representation of an object can, for example, temporarily make it more difficult than usual to perceptually attend to the object that the representation is about (Johnson et al. 2013). But after a longer delay, refreshing actually make it easier than usual to perceptually attend to the object that the representation is about (Johnson et al., 2013). Refreshing a representation of an object can also increase participants’ long-term capacity recognize the object that the representation is about (Johnson et al., 2002). Moreover, on Johnson et al.’s view, refreshing has phenomenal upshots as well: they say that it “foregrounds” a mental representation of an object in a way that is similar to the way that stimuli are “highlighted” by perceptual attention (Johnson et al. forthcoming p. 1).

Incidentally, I think all this goes to show that Johnson et al.’s work could be used to inform many recent debates in the philosophy of mind. Johnson et al.’s claim that refreshing is a minimal cognitive act bears direct relevance to recent philosophical debates about the nature of mental actions – see, e.g., O’Brien and Sorteriu (2009) for discussion. Johnson et al.’s claim that refreshing has functional or epistemic consequences bears directly on the questions of whether attentive experience has a different epistemic role than inattentive experience, and if it does, why it does – see, e.g., Silins and Siegel (2013) for discussion. And lastly, Johnson et al.’s claim that refreshing has phenomenal upshots has direct bearing on the two important philosophical debates about consciousness. Firstly, the debate about whether there are cognitive experiences at all – see, e.g., Smithies (2013) and Carruthers and Veillit (2011) for discussion. And secondly, on the debate about whether cognitive experience can sometimes be rightly characterized as structured into a
center and periphery, or foreground and background – see, e.g., Chudnoff (2012) and Martin (1997) for discussion.

But despite the promising connections between Johnson et al.’s work and recent debates in the philosophy of mind, I'll now argue there is a dilemma about how to understand Johnson et al.’s approach to attention. But note that my ultimate goal will be to vindicate their approach. In the final section of the chapter, I will argue that attributing a refined version of (IS) to them allows them to avoid the dilemma - and puts philosophers in a positon to properly bring Johnson et al.’s work to bear on the philosophical debates that I mentioned above.

2.1 Using inattentive cognition to perform a task

Some of the tasks that we use attentive mental processing to accomplish are also tasks that we can use inattentive mental processing to accomplish. Successful driving, for example, is frequently enabled by attentive perception of the road. But frequently, drivers will focus their attention on something other than the road – a train of thought or a conversation, for example. In these cases, successful drivers will arrive at their destinations with almost no memory of what they had inattentively perceived during the drive.

For the range of tasks that can be accomplished through the uses of both attentive and inattentive mental processing, just noting that a subject has successfully completed the task does not provide a complete basis for the conclusion that she has done something attentively in order to accomplish the task. Additional work needs to be done to rule out the hypothesis that she did something inattentively in order to accomplish the task. To carry on with the example that I introduced above, just noting that someone has
successfully driven from their house to their office does not put us in a position to infer that the driver attentively perceived the roads between their house and their office. They may, after all, have inattentively perceived the roads.

The “additional work” to which I just referred could take various forms. William James thought that “[t]he immediate effects of attention are to make us: [perceive, conceive, distinguish, and remember] better than otherwise we could” (James 1890). His view suggests that we ought to independently establish that completing a task without using some attentive mental processing is associated with certain results - e.g., performing the task distinctively slowly or unreliably. Then we could use observations of successful task completions and the lack of observations of the results of completing the task without doing something attentively to come to conclusions about when participants have completed tasks through doing something attentively.

To carry on with my example, perhaps using an inattentive perceptual experience to drive from your home to your office is reliably associated with not being able to remember what the experience was like. This suggests that one reliable path to conclusions about perceptual attention that occurs during driving is using observations of successful driving combined with facts about what drivers can remember. But with these considerations in mind, it should be clear that moving to conclusions about perceptual attention to the road just on the basis of observing some successful driving is not careful enough an inference.

I think that a great deal of Johnson et al.’s work on refreshing seems like it might not be careful enough in just this respect. They seem to frequently move from just the observations of successful task completions to conclusions about refreshing. But it’s not
obvious that the tasks in question couldn’t be completed through the use of the inattentive mode of thought.

My ultimate goal, as I’ve mentioned, will be to vindicate Johnson et. al. But working through the evidence that they make problematic inferences of this kind will put us in a position to see why it is tempting to attribute the unrefined version of (IS) to Johnson et al.

I’ll discuss just one of their inferential moves in depth – it’s representative of all their studies on refreshing. The paper that I’ll discuss is “Second Thoughts versus Second Looks: An Age-Related Deficit in Reflectively Refreshing Just-Activated Information” (2002). In short, they exposed participants to a list of words as well as cues to refresh those words, and then they had a surprise test about which words participants remembered seeing. Here is the description of the method of the experiment Johnson et al. conducted:

“In Phase 1, participants read [aloud] as quickly as possible a list of unrelated words presented sequentially on a computer. Critical words were presented once (single presentation condition), immediately repeated (repeat condition), or followed by a dot (●), which signaled participants to think of the just-previous word and say it again (refresh condition). Interspersed in the presentation list were perceptual identification trails in which words appeared in degraded form and were difficult to read. Half of the degraded words were the critical words from pervious trails and half were new. Phase 2 was a surprise recognition test in which the three types of critical words were randomly mixed with new words that had not been encountered in Phase 1, and participants indicated whether each word was old or new.” (p. 64)

It turns out that the various conditions result in three different kind of reaction times during the surprise test in Phase 2. When participants were responding to a query on the surprise test, they tended to respond very quickly if it was a word that they had been instructed to think attentively about during Phase 1. Moreover, it turns out that refreshing a word also increases the odds that a participant will remember having refreshed it even
later on (i.e., even later than the surprise test). And this is what Johnson et al. take these results to show about refreshing:

... there was an age-related deficit in the simple reflective operation of thinking of a just-presented item (refreshing). (Johnson et al. 2002 p. 66).

What Johnson et al.'s claim about the results as a whole shows us is that they presumed that participants in the “Refresh” condition were using attentive cognition to complete their tasks. That is, they assume that younger and older adults in the condition were both using attentive thought, but that the functional upshots of that attentive thought were degraded for many of the older adults.

But this inference seems too quick. It is true that younger participants responded to words more quickly in the “Refresh” condition, and it is true that being exposed to a word in the “Refresh” condition increased the likelihood that it would be recognized later more for younger participants than for older participants. It’s also true that whatever participants were doing in the “Refresh” condition was, later on, putting them in a better epistemic position than whatever participants were doing in the “Repeat” and the “Single” condition. However, it is not as obvious that the participants that were responding more quickly to the words in the “Refresh” condition were actually refreshing their representations of the words. If there is also an inattentive way of thinking about objects, and if the task of thinking about a word is a task that could be completed through using both the attentive and inattentive modes of thought, then this experimental design has done nothing to rule out the hypothesis that participants were using that mode of cognition to complete their tasks.
And it *does* seem plausible to suggest that there is an inattentive mode of cognition, as I discussed in the first chapter. Consider, to illustrate this point, Christopher Mole’s description of a devoted but tired scholar:

> His reading of the book before him is prompted by genuine interest, but having spent the whole day trying to ignore the pangs of hunger, the children in the next room, and the radio that is playing downstairs, he is no longer able to concentrate. His reading is prompted by interest, but it is not attentive. (Mole 2010 pp. 48-49).

As I noted in the first chapter, Mole’s description of the case seems apt: there seems to be an inattentive mode of thought as well as an attentive mode of thought, and the scholar is failing to engage in the attentive mode of thought.

At this point, I think it seems reasonable to suggest participants in Johnson et al.’s study might have been getting the job done while focusing their attention on something other than the study, just like the distracted driver or the tired but devoted scholar. And, as I mentioned above, this study is representative of Johnson et al.’s work on refreshing. In general, it seems like the way that they make inferences on the basis of observed behavior doesn’t seem to rule out the skeptical hypothesis that these participants used some inattentive cognition to complete their tasks. I’ll ultimately argue that there is a way of interpreting Johnson et al. that allows us to avoid this problem – the key is to look for sources of evidence other than the way they make inferences on the basis of observed behavior – but first I’ll move on to the second horn of the dilemma.

**2.2 (IS) and intuitions about phenomenal structure**

The second horn of the dilemma arises from the natural way of responding to the first horn. You might think that the first horn isn’t a genuine problem, and that Johnson et
al. believe that any sort of use of information from a representation of some object to guide a performance of a task is sufficient for intellectual attention to that object. As I mentioned above, Wu (2014) has argued that many psychologists tacitly endorse just such a sufficient condition for *perceptual* attention. An analogous belief about intellectual attention would certainly explain why Johnson et al. seem to think that *any* way of thinking about an object counts as intellectual attention to that object.

As I observed in the first chapter of this dissertation, the way that Johnson et al. move from observations of the way their participants behave to conclusions about the way that participants deployed their intellectual attention *does* give us a reason to think that Johnson et al. have such a belief. But now I will argue that the reason in question is not actually a *decisive* one, and that it is outweighed by considerations that arise when we look at other aspects of Johnson et al.’s work on intellectual attention.

The problem is that Johnson and her colleagues, throughout the years, have repeatedly stressed a commitment about the concept of attention that is at odds with (IS). It’s true that part of Wu’s approach, and my own approach in the first chapter, is based on discounting *some* of what psychologists say about the concept of attention in order to allow us to conclude that a large group of psychologists are all studying the same phenomenon, despite the fact that they all describe it in slightly different ways. But it seems like a mistake to discount *all* of what a psychologist says about the concept of attention—in particular, a claim about the concept of attention which she has repeatedly and explicitly made over the course of about thirty years of the study of attention. Such a claim seems like an important source of evidence about what that psychologist thinks about the concept of attention.
The claim in question is the thesis that consciously attending to an object causes our experience of that object to become foregrounded (or more vivid, or more central, or highlighted) in our fields of consciousness. As I mentioned in the introduction of the dissertation, Mole (2008) has argued that this claim is a part of the folk theory of attention and consciousness. For convenience, here I’ll repeat the explanation of what it means for something to become foregrounded in consciousness. Consider figure below:

![Figure 6: Three crosses](image)

There are (at least) two different ways to see this image. While directing your gaze at the centre cross, you can focus your visual attention on the cross on the left, in which case the cross on left seems to be in the foreground of your consciousness and cross on the right seems to be in the background of your consciousness. Alternatively, while directing your gaze at the centre cross, you can focus your visual attention on the cross on the right, in which case the cross on the right is in the foreground of your consciousness and the cross on the left is in the background of your consciousness. Mole's claim is that, according to the common sense view of visual attention and visual consciousness, shifts in visual attention seem to cause changes in what is in the foreground of visual consciousness.
Here are some examples of the way that Johnson et al. have talked about attention over the years, which seem to reveal that Johnson et al. believe that conscious intellectual attention alters the structure of conscious cognition, much in the way that conscious visual attentions seems to alter the structure of conscious vision:

(A) ... refreshing: the act of thinking of or foregrounding one of several active mental representations via reflective attention, similar to highlighting one of several present sensory stimuli via perceptual attention (Johnson et al. forthcoming p. 1).

(B) .... we examined a simple reflective-attention process that is a close analogue to perceptual selective attention. Refreshing is the act of thinking back to and foregrounding an active mental representation. (Johnson et al. 2013 p. 1105).

(C) The result of refreshing is to briefly augment (and foreground) and/or extend (maintain) activity associated with a recently activated representation. (Johnson et al. 2007 p. 13)

(D) In MEM, activated memory consists of currently activated information from all subsystems, sensory, perceptual, and reflection. Activated memory is created by ongoing entry processes. But we are not equally aware of all activated entries; only a subset receives conscious attention. (Johnson 1983 p. 95)

I take all this to be conclusive evidence that Johnson et al. endorse the claim that refreshing alters the phenomenology of conscious cognition. While (D) is the only passage that explicitly mentioned consciousness, (A) and (B) make it clear that the way that refreshing alters conscious cognition is analogous to “highlighting” in perception, which seems like a phenomenal notion. Moreover, Johnson et al. explicitly say that their lab has, throughout the years, always been investigating conscious cognition even when they didn’t explicitly say so:

The invitation to participate in the 25th Carnegie Symposium on Cognition asked participants to consider fundamental issues of
consciousness and encouraged us to 'let our hair down'. We signed up for the task because the company was good and, like many cognitive labs, our labs has always worked on consciousness, whether or not we called it that. (Johnson and Reeder 1997 p. 261).

Now that I've presented the evidence that Johnson et al. think that intellectual attention causes foregrounding in conscious cognition, we can move on to the argument that endorsing the thesis that refreshing alters the structure of conscious cognition and (IS) at the same time is an unstable combination of commitments, and not one that we should attribute to Johnson et al. (if we are being charitable).

Consider the class of experiences that can be rightly characterized as structured into a centre and a periphery, or a foreground and a background (I take these terms to be interchangeable). If we endorse Johnson et al.’s claim and (IS), then we can give an explanation of why some of the experiences in that class are structured in the way that they are. But there is a range of cases such that endorsing Johnson et al.’s claim and (IS) precludes our being able to offer an explanation of why the experiences in that class are structured in the way that they are (more on this premise shortly). If that is so, then no one should endorse both claims. Charity demands, therefore, that we don’t think that Johnson et al. endorse both claims.

Here is the argument for the most important claim I just made above – that there is a range of cases such that endorsing Johnson et al.’s claim and (IS) precludes being able to offer an explanation of why some of the experiences in that class are they are structured in the way that they are structured. Imagine the kind of subject Watzl asked us to imagine in one of his cases earlier in this paper – a subject engrossed in a conversation, who at the
back of her mind engaged in some inattentive thought about some absent object – say, a cup in a different room.\textsuperscript{44} Here are two things that seem true about such a subject:

(i) During the conversation, and as a result of the way she deployed her attention, her experience of the conversation was more vivid, or central, or foregrounded in her field of consciousness, than her experience of making a judgment about the cup.

(ii) During the conversation, she used information from her representation of the ongoing conversation to guide her performance of the “follow the conversation” task, and she used information from the cup to guide her performance of the “make a judgment about the cup” task.

We should be able to provide an explanation of why her experience is structured in the way described in (i). But if we endorse the idea that attention causes foregrounding (or increased centrality, or increased vividness), and also the idea that any kind of use of information from a representation of an object to guide the performance of a task is sufficient for attention, then we are unable to provide that explanation. Indeed, that combination of ideas predicts that the cup should have been just as central in her field of consciousness as the conversation. But that seems like the wrong result.

There are a wide variety of cases like this one, and someone that endorses both Johnson et al.’s thesis about attention and foregrounding and (IS) won’t be able to give an adequate explanation of the ways in which those experiences are structured. The source of the problem is that Johnson et al.’s thesis goes along with thinking that attention is a \textit{special} mode of engagement with an object, and that (IS) goes along with thinking that attention is

\textsuperscript{44} As I noted above, Watzl’s case involved a cup that may have been in the subject’s visual field, which complicates the verdict of whether he attention to the cup was intellectual or perceptual. I’ve added this detail about the cup’s location to simplify the intuitive verdict.
an extremely minimal mode of engagement with an object. It should be unsurprising that the combination of these ideas in unstable.

So that’s both the horns: if we interpret Johnson et al. as endorsing (IS), then we need to reject one of their core claims about attention. But if we don’t interpret them as endorsing (IS), then we seem to lack an explanation of why their experimental designs are actually putting them in the position to make the conclusions that they do.

A natural way out of this dilemma is to suggest that Johnson et al. do understand attention in a way that links it with foregrounding, but that, despite the initial appearances, Johnson et al. actually rely on something other than (IS) to justify their moves from observations of behavior to conclusions about attention. Taking this way out is very theoretically attractive, because it allows us to understand these psychologists’ work in a way that is maximally charitable. We can resist rejecting their core claims about attention, and we can say that their data actually supports their results.

In the final section of this chapter I show how to make that move. But first I’ll look at how this dilemma emerges in another part of the empirical literature.

3. Brian McElree and Matthew Wagers on attention

As I discussed in the first chapter, Brian McElree (2006), using the “n-back” paradigm, has studied the effects of intellectually attending to recently seen object. Participants in the n-back paradigm see a series of letters one by one. The task is to press a button when the n-th back letter in the series is identical to the letter that they are currently viewing (call such a letter a “target letter”). The set of slides below is an example some slides from the 3-back condition (the “target letters” are outlines, for expository purposes, while the other letters are solid):
Participants complete the $n$-back task more rapidly and accurately in the 1-back condition than in the other conditions (for any $n$ higher than 1, the task is difficult). Many psychologists, including McElree, explain this discrepancy between reaction times by saying that in the 1-back condition, subjects can respond as quickly as they do because they were already attending to the previously seen 1-back letter, and can immediately compare it to the currently seen letter. By contrast, for subjects in the 2 or more back condition, some additional processing of some sort (e.g. retrieval from memory) must go on before subjects can attend to a previously seen letter so as to compare it to a currently seen letter.\(^{45}\)

McElree and Wagers (ms) have also explored a related paradigm that investigates the role that attention plays in the comprehension of speech. In this paradigm, they test whether increasing the number of words in between a determiner and the noun phrases with which it combines makes it more difficult to determine whether the number of the noun phrases agrees with the number of the determiner. Here, for example, are some of the sentences that they used:

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(1) The detective was mistaken about the location of that burglar/burglars*
(2) The detective was mistaken about the location of that risk-taking burglar/burglars*
(3) The detective was mistaken about the location of that clever, risk-taking burglar/burglars*
(4) The detective was mistaken about the location of those burglars/burglar*
(5) The detective was mistaken about the location of those risk-taking burglars/burglar*
(6) The detective was mistaken about the location of those clever, risk-taking burglars/burglar*

In this study, McElree and Wagers found a pattern of results similar to the pattern of results found using the $n$-back paradigm. When no extra words intervened between a determiner and the noun phrase with which it combined (as in both versions of sentence (1)), participants were able to very quickly and accurately respond to the question of whether the sentence was grammatical. However, when any additional number of words intervened, there was a dramatic spike in the time that it took to respond, as well the odds that the participant would make a mistake. On the basis of all this, they concluded that processing intervening words between a determiner and its noun phrase causes a participant to stop attending to the number of the determiner. Then, when the participant is required to figure out whether the sentence was grammatical, they need to refocus their attention on it in order to respond to the question.

It seems like the skeptical hypothesis I raised about Johnson et al.’s work in the refreshing paradigms can be raised about these two paradigms as well. In these paradigms, when McElree and Wagers make inferences about attention they appear to be moving straightforwardly from observations of task completions to conclusions about their participants’ distribution of intellectual attention. But just like the distracted driver or the
tired but devoted scholar, participants in this study might have been getting the job done while focusing their attention on something other than the study.

As with Johnson et al., one explanation of why that skeptical hypothesis is not a live option would be to attribute the unrefined version of (IS) to McElree and Wagers, as I observed that we had some reason to do in the first chapter. According to that sufficient condition, merely using information from a cognitive representation to guide the performance of the n-back task or the grammatical judgment task is sufficient for intellectual attention.

However, as with Johnson et al., there are some reasons to be skeptical of the claim that McElree and Wagers actually endorse (IS). Consider the following passages, which are representative of their work on attention:

... observed discontinuities in retrieval speed ... provide the most direct evidence of what is in focal attention. As outlined earlier, this evidence indicates that focal attention is able to maintain only one temporally extended event across a dynamically changing environment. This is usually the last item processed, but it may include more than one nominal item if those items can be simultaneously encoded into a chink that forms a single processing epoch. (McElree 2006 p. 187)

Language comprehension requires the coordination of different information at levels of analysis and from different segments of an expression. Successful interpretation thus depends on working memory resources to access and manipulate recently encoded information. However, working memory resources are strongly capacity constrained. An important dimension of this capacity is the scope of information that is directly and concurrently accessible to cognitive processes. Such information is said to be in the focus of attention. Data from several paradigms suggests that the number of representations that can occupy the focal state is severely limited, perhaps to only one chunk. (McElree and Wagers ms p. 1)

What both these passages show is that for McElree and Wagers, the span of
attention is narrow. They think that we can only attend to one, or at most just a few related things at once (they call these small groups of related things “chunks”). But it’s reasonable to think that we can take actions that are guided by representations of a large number of objects at once – for example, a skillful rock climber’s next move is informed by her perceptual representations of various parts of her own body and various aspects of the path ahead, or an episode of practical deliberation might be guided by a large number of an agent’s background beliefs as well as her current perceptual representations. So if we attribute (IS) to McElree and Wagers, then we need to say that on their view agents can actually attend to a very large number of objects at once – a claim that is at odds with one of their core, repeated, and explicit claims about attention.

As with Johnson et al., the problem for interpreting McElree and Wagers is best put as a dilemma. Either they endorse (IS) or they do not. If they do not, it’s not obvious why observing subjects completing a task put them in a position to conclude that the subjects did something attentively – after all, their subjects might have used some inattentive cognition to get the job done. If they do, then their actual understanding of attention is at odds with something that they consistently and explicitly say about attention.

Again, a natural way out of this dilemma is to suggest that McElree and Wagers do understand attention in a capacity-limited way, but that, despite the initial appearances, McElree and Wagers rely on something other than (IS) to justify their moves from observations of behavior to conclusions about attention. Taking this way out is very theoretically attractive, because it allows us to understand these psychologists’ work in a way that is maximally charitable – i.e., we can take what they say about attention at face
value, and we can understand their work in a way that allows us to say that their methods do support their conclusions.

4. A solution

So far in this chapter I've presented two linked problems. The first was Watzl’s problem: that (IS) seems to be too broad. (IS) seems to be too broad because we can imagine cases where a subject seems to be using information from a cognitive representation to guide the performance of a task, but where the subject does not seem to be attending to the object that the cognitive representation in question is about. The second problem was a dilemma about how to understand the way that Johnson et al., McElree, and Wagers understand attention: either we say that they endorse (IS), in which case we need to reject some of their core claims about attention, or we say that they don’t endorse (IS), in which case we lack an explanation of why their methods put them in a position to make the conclusions about attention that they do.

I think that we can refine (IS) in a way that will address both of these problems. The refined version of (IS) will capture the right kinds of cases, and moreover it will enable us to interpret Johnson et al., McElree, and Wagers in a way that addresses the interpretive dilemma. First I’ll look at the textual evidence that Johnson et al., McElree, and Wagers weren’t interested in studying all task completions, and just, in a rough sense, the completions of primary tasks. Roughly, primary tasks are tasks that agents take seriously, and try to perform well. Secondly, I’ll give more of an analysis of “primary”, and show how it allows us to solve the problems that Watzl raised for both (IS) and (PS).

4.1. Addressing the interpretative dilemma

According to the broad version of (IS), Johnson at al, McElree, and Wagers all think
that using information to guide the performance of any task is sufficient for attention. But here is some textual evidence that Johnson et al., McElree, and Wagers did not think that using information to guide the performance of all tasks was sufficient for attention:

“Participants were instructed to respond within 300 ms of the tone. They were informed that responses longer than 300 ms were too long and that responses faster than 120 ms were anticipations.” (McElree 2001 p. 8)

“Items were presented at a 2.5-s rate (2 s on, 0.5-s interitem interval), and response times were collected via voice key. Responses were recorded on audiotape; trials in which the voice key was triggered by erroneous responses, coughs, or other extraneous sounds were discarded.” (Johnson et al. 2002 p. 4)

These notes about their practices of discarding data are present in almost every study of McElree’s and Johnson’s that makes us of the refreshing paradigm or the n-back paradigm. In general, Johnson and her colleagues are not interested in studying incorrect task performances, and McElree and his colleagues are not interested in task performances that take longer than 300 ms.

Roughly, what seems to explain this practice is that these psychologists weren’t interested in studying task completions of participants that weren’t taking the task very seriously. Why might they be interested only in the task completions that participants took seriously? I think that what explains that practice is that these psychologists presupposed that uses of information to guide the performance of a task that a participant was not taking seriously would be insufficient for attention. Johnson’s thought seems to be that the refreshing task is so easy that if you got it wrong you couldn’t have been doing it attentively, while McElree’s and Wagers’ thought seems to be that if you take longer than
300ms to respond to their tasks, you’re not doing it attentively. Later in this chapter I’ll develop a more rigorous analysis of what it means to take a task seriously, but for now, a rough understanding will suffice.

This fact about how these scientists discard data also shows us what’s mistaken about a move that Wu makes while developing his sufficient condition for perceptual attention into a complete account of the metaphysics of attention, which I mentioned in the introduction above. When he argues for dropping the word “experimental” from the phrase “experimental task” in an early formulation of his sufficient condition for perceptual attention, he says:

“It seems unduly narrow, however, to restrict the notion of a task in the sufficient condition to these specific experimental paradigms. After all, in performing these tasks, subjects do the sorts of things they do all the time: they say things, look, listen, and produce responsive movements. While psychologists have focused on a specific set of tasks in investigating attention, there is nothing special about the tasks that give psychologists special access to attention” (Wu 2014 pp. 83-84).

The problem with that line of thought is that experimental tasks are special, but not in virtue of being a particular kind of task, like listening to something or looking for something. What’s special about experimental tasks is the manner in which they are performed. They performed in a serious manner, not a slapdash manner.

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46 c.f. Wu’s remarks on participants performing experimental tasks poorly: “Obviously, when subjects are not doing the task, say when they twiddle their thumbs or continuously get things wrong, this is evidence that they are not appropriately selecting the relevant target and are being inattentive.” (2014 p. 39). It probably is the case that many instances of discarded data are to be explained by the participant not having done the task. But it’s important to note that in the cases I discuss in this part of the chapter, the inattentive participants did complete the tasks – they just didn’t complete them according to a fairly exacting standard. If the participants hadn’t actually completed the task, then we would not have evidence that psychologists think that uses of information to guide a certain range of task performances are insufficient for attention.
Psychologists that study attention set up experimental tasks and analyze them in such a way that the participants tend to take their tasks seriously, and psychologists strive to only analyze the behavior of subjects that take their tasks seriously. When they analyze the task performances that they're interested in, they seem to behave as though task completion is sufficient for attention, but that's because – in advance – they have curated the set of task completions that they are talking about. That is why simply dropping the word “experimental” from one of the empirical sufficient conditions for attention would be a mistake.

But, like Wu, I would like to transform the sufficient condition into one that would apply outside the laboratory, and in this the rest of this chapter I will show how to achieve that goal. I think that if we work out more clearly what it is to take a task seriously, we can preserve what’s important about the sufficient condition, but also transform the sufficient condition into one that applies outside the context of experimental tasks.

4.2 Taking a task seriously

In what follows, I’ll adopt Christopher Mole’s conception of “task”, which he aims to be a “regimentation of commonsense usage rather than … an innovation” (Mole 2011 p. 52). Here is how Mole introduces the concept of a task:

“A subject’s ‘tasks’, as these are to be understood here, are the things that the subject is in the business of doing and that she is active with. To specify the tasks in which an agent is engaged, we adopt the agent’s point of view on her own activities. Normal human tasks are things such as making a cup of tea, following a conversation, or looking for the car keys. They are activities with natural descriptions of a sort that the subject would typically accept as a description of her goal…. ‘What task is this agent performing?’, when asked outside the lab, may admit of many answers, some of which are only vaguely
true.” (Mole 2011 p. 52).

The problem cases for (PS) and (IS) that we have discussed so far have all involved agents engaged in various kinds of tasks, e.g. following a conversation, picking up a cup, thinking about a cup, thinking about a letter, and thinking about a word. These are all what Mole called “normal human tasks”, and when we adopt the point of view of the subject’s in Watzl’s thought experiments, or in the psychologists’ actual experiments, we can come to conclusions about what tasks the subjects seem to be engaged in.

Another aspect of Mole’s account of tasks is that agents can allocate various amounts of their cognitive resources to the tasks that they perform (Mole 2011 p. 53). For Mole, cognitive resources are personal level mental states or processes, like visual states, or ideas, rather than sub-personal mental states, like, e.g. a representation of hormone levels in the pituitary gland. Consider, for example, the task of sneaking across a room without being seen by the people that are inside the room. There are various cognitive resources that an agent might be able to bring to bear on the performance of that task – e.g., her visual awareness of obstacles in the room, or her ideas about how to distract the people inside of the room, and so on.

We can use Mole’s idea that people can allocate varying amounts of cognitive resources to the performance of a task comes in making a distinction that will be useful in elucidating what it is to take a task seriously – the distinction between “primary” and “secondary” tasks. Just as it is ordinary to explain a person’s behavior through saying that they are engaged in a particular task, it is ordinary to explain a persons’ behavior in virtue of the fact that they are engaged in an important, or “primary” task, and a less important, or
“secondary” task.

To illustrate this idea, imagine a law firm with ten employees that is currently working on two contracts (A) and (B), and grant, for argument's sake, that performing well at completing contract (A) would require putting six employees on the job and performing well at completing contract (B) would require putting six employees on the job. Imagine further that the firm put six employees on contract (A), and four on (B). As a result, the firm did a good job at completing contract (A), and actually failed to successfully complete contract (B). A natural way of explaining this turn of events would be to say that, for the firm, completing contract (A) was a primary task and completing contract (B) was a secondary task.

It’s plausible to think that this sort of explanation can be used to explain the tasks that a person achieves or does not achieve, as well. Sam the Scholar might have two papers of equal complexity to write, but end up doing one well and the other poorly. A natural way of explaining this result would be to say that, for Sam, completing one of those papers as a primary task, and completing the other was a secondary task.

With those intuitive considerations about primary tasks on hand, here is a more precise way of getting at the idea of “primary” and “secondary” tasks. For an agent A and a task T:

(i) Call the cognitive resources that A could gainfully allocate to the performance of T the “task-relevant cognitive resources for T”. If A allocates all or most of the task-relevant cognitive resources for T to the performance of T, then T is a primary task for A.

(ii) If A is performing T but T is not a primary task for A, then T is a
secondary task for A.

Here is an example of that will help demonstrate how this analysis works. Suppose that for A, the task-relevant cognitive resources for summing 1+1 are 10% of her total cognitive resources, and that the task-relevant cognitive resources for playing the clarinet are 50% of her total cognitive resources, and that the task relevant cognitive resources for summing 1+1 are a proper subset of the task-relevant cognitive resources for planning what to have for dinner. These are some verdicts that my analysis would make about A’s potential ways of allocating her cognitive resources to these two tasks:

(i) A could allocate 10% of the task-relevant set for summing 1+1 to the task of summing 1+1, and 10% of the task-relevant set for playing the clarinet to playing the clarinet, and in so doing make both tasks secondary tasks for herself.

(ii) A could allocate 90% of the task-relevant set for summing 1+1 to the task of summing 1+1, and 90% of the task relevant set for playing the clarinet to playing the clarinet, and in so doing make both tasks primary tasks for herself.

(iii) A could allocate 90% of the task-relevant set for summing 1+1 to the task of summing 1+1, and 10% of the task-relevant set for playing the clarinet to playing the clarinet, and in so doing make both the former task a primary task for herself, and the latter task a secondary task for herself.

(iv) A could allocate 10% of the task-relevant set for summing 1+1 to the task of summing 1+1, and 90% of the task relevant set for playing the clarinet to playing the clarinet, and in so doing make the former task a secondary task for herself, and the latter task a primary task for herself.

The distinction between primary tasks and secondary tasks puts us in a position to consider this refined version of (IS), according to which uses of information that are for the sake of a primary task are the uses of information that are sufficient for attention:

(IS*): Subject S intellectually attends to X if S cognitively selects X to
guide performance of some *primary* task.

I think that this refined version of (IS) does a good job of capturing our intuitions about attention. Consider the intuitions about attention that we have when we consider the four cases above:

(i) A could allocate 10% of the task-relevant set for summing 1+1 to the task of summing 1+1, and 10% of the task-relevant set for playing the clarinet to playing the clarinet, and in so doing make both tasks secondary tasks for herself. As a consequence, her performance of both tasks is slapdash. In so doing, her uses of information to guide the performances of both tasks seem *insufficient* for attention. (And as long as we assume that A is not engaged in any other tasks across this span of time, then A had no primary tasks across this span of time).

(ii) A could allocate 90% of the task-relevant set for summing 1+1 to the task of summing 1+1, and 90% of the task relevant set for playing the clarinet to playing the clarinet, and in so doing make both tasks primary tasks for herself at the same time. As a consequence, her performance of both tasks is excellent. In so doing, all of her uses of information to guide the performances of either task seem *sufficient* for attention.

(iii) A could allocate 90% of the task-relevant set for summing 1+1 to the task of summing 1+1, and 10% of the task-relevant set for playing the clarinet to playing the clarinet, and in so doing make the former task a primary task for herself, and the latter task a secondary task for herself. As a consequence, her performance of the former task is excellent and her performance of the latter task is slapdash. In so doing, her uses of information to guide the performance of the former task seem *sufficient* for attention, and her uses of information to guide the performance of the latter task seem *insufficient* for attention.

(iv) A could allocate 10% of the task-relevant set for summing 1+1 to the task of summing 1+1, and 90% of the task relevant set for playing the clarinet to playing the clarinet, and in so doing make the former task a secondary task for herself, and the latter task a primary task for herself. In so doing, her uses of information to guide the
performance of the former task seem *insufficient* for attention, and her uses of information to guide the performance of the latter task seem *sufficient* for attention.

The fact that (IS*) does such a good job of capturing our intuitions about attention is a reason that speaks in favour of endorsing it\(^{47}\). Secondly, (IS*) is motivated by the way that Johnson et al., McElree, and Wagers seem to understand intellectual attention. Thirdly, in the rest of this chapter I’ll show that (IS*) (and a similarly reformed sufficient condition for perceptual attention) can address the intuitive objections that Watzl has raised for (IS) and (PS).

### 4.2 Solving Watzl’s problem

Watzl presented two cases where a subject was engaged in two tasks at the same time, and in which the subject seemed to be using information to guide the performance of both tasks, and yet not really attending to the object involved in one of the tasks. The first case was being engrossed in a conversation while picking up a cup without attending to the cup, and the second case was being engrossed in a conversation while thinking about a cup without attending to the cup.

What we're now in a position to appreciate is that Watzl's problem cases are under-described. He tells us that the subject succeeded in simultaneously following the conversation and picking up the cup, and succeeded in simultaneously following the conversation and thinking about the cup. But he didn't specify the *manner* in which the subject allocated cognitive resources to those two tasks, and differences in that manner of

\(^{47}\) Note that making a task primary for oneself does not *necessarily* mean that one will do a good job at it: that depends on one’s competence and potentially other background factors. In the cases above, I assume that the subject is competent at all the tasks in question.
allocation can actually lead to very different intuitive verdicts about how the subject deployed her attention – intuitive verdicts that (IS*) and an analogously modified (PS) straightforwardly predict.

Imagine, for example, that the task-relevant set of cognitive resources for picking up the cup or thinking about the cup comprised 20% of the subject’s total cognitive resources, and that the task-relevant set of cognitive resources for following the conversation comprised 90% of the subject’s total cognitive resources, and that 10% of the subject’s total cognitive resources were elements of both of those task-relevant sets. Imagine further that the subject allocated 100% of the task-relevant set for following the conversation to following the conversation, and 50% of the task-relevant set for thinking about the cup or picking up the cup to either of those two tasks. (IS*), unlike (IS), predicts that in this case, the uses of information to guide the performance of the thinking about the cup were not sufficient for attention. The uses of information to guide the performance of picking up the cup were not sufficient for attention. Therefore this is the kind of resource allocation that seems to underlie Watzl’s intuitive verdict about the case

But it is worth pointing out that things could have gone differently in such a dual-tasking case. Imagine, for example, that the task-relevant set of cognitive resources for picking up the cup or thinking about the cup comprised 10% of the subject’s total cognitive resources, and that the task-relevant set of cognitive resources for following the

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48 I am assuming that in the case under discussion, the subject was using information from cognitive representations to guide her thought about the cup. But it does seem possible for us to use information from both perceptual and cognitive representations to guide our thought about certain objects.
conversation comprised 90% of the subject’s total cognitive resources, and that there was no overlap between the task-relevant sets of cognitive resources. In this sort of case, the subject could have allocated 100% of the task-relevant cognitive resources to the performances of both tasks. And in this sort of case, we have the intuition that the subject’s uses of information to guide the performances of both of her tasks are sufficient for attention.

So (IS*), and an analogously modified (PS), are refined versions of the sufficient conditions that solve Watzl’s problem. (IS*), unlike (IS), is not too broad. If a subject is engrossed in a conversation, but making some thought about a cup a secondary task for herself, (IS*) does not predict that her uses of information in service of that latter task are sufficient for intellectual attention.

Before ending the chapter, I’ll address a challenge for my view that’s posed by the way that expertise enables agents to allocate cognitive resources to the performances of particular tasks.

5. The objection from expert action, and a reply

5.1 The objection:

Expertise (e.g. expertise at driving cars) enables us to perform certain actions without attention (e.g. driving a car). The account of attention presented in this chapter is incompatible with that result. That’s because on the account presented in this chapter, whenever we allocate enough cognitive resources to something to do it well, it is a primary task for us, and uses of information to guide the performances of primary tasks are
sufficient for attention. (c.f. Mole 2011 p. 114: “responses to traffic lights and to stop signs are paradigmatically not effects of attention”).

5.2 Short reply

No. My account predicts that experts (e.g. experienced drivers) can perform certain actions (e.g. driving) both with and without attention, as any adequate account of attention should predict. Even for experts, there is a difference between the attentive and inattentive mode of performing a task. And the same goes for our performances of very easy tasks, where “expertise” comes cheaply.

5.3 Longer reply

There are striking differences between the phenomenologies of performing new, unfamiliar tasks and performing tasks that we have extensively practiced. When a task is new and unfamiliar, performing it seems difficult, and attentive thought is given to every step of performing the task. By contrast, as experts of many kinds report, once we are good at performing a task, attentive thought to every step of performing the task actually seems to interfere with performing it well.\(^{49}\)

First, it is important to note that these points about the phenomenology of unskilled action and expert action do not tell against the claim that attention never can or should play a useful role in the performance of expert actions. They tell against just the claim that attention should play one very particular role in the performance of expert actions. My

\(^{49}\) See, e.g., Bruya (2010) or Jennings (2015) for discussion.
account does not say, for example, that experienced drivers need to attend to all the subtasks involved in driving, like turning on the blinkers, in order to drive.

But even with the above caveat in mind, it might still seem like some expert uses of information are counterexamples to the account of attention that I defend in this chapter. Suppose an experienced driver devotes a relatively small amount of cognitive resources to the task of driving, but that on account of her expertise, this amount of cognitive resources is enough to enable her to perform the reasonably well. Moreover, during the drive, she actually ends up devoting most of her cognitive resources to the task of figuring out a mathematical proof. You might think that the restricted versions of both sufficient conditions say that her uses of information from various representations to guide the performance of the task of driving are sufficient for attention, but that intuitively, these uses of information seem insufficient for attention. Therefore, you might think that (IS*) and an analogously restricted (PS) are both too broad, just like the initial versions of the sufficient conditions.

This line of thought is mistaken, but reflecting on it will reveal some important details of my account of attention. Suppose, in the middle of the drive that we are imagining, that a deer runs across the road. Here is a question we can ask about the driver, at the precise moment of the appearance of the deer: was the driver allocating cognitive resources to the driving task in a way that would enable her to immediately swerve away from the deer, or was she not allocating cognitive resources to the driving task in such a way?

I think that if she were already allocating cognitive resources to the driving task in a way that would enable immediate swerving, we would have the intuition that her uses of
information to guide the performance of driving, both before and during the swerve, were sufficient for attention. In such a case, the driver would be genuinely allocating enough cognitive resources to the driving task to do it well, and so by my lights, she would be allocating all or most of the cognitive resources in the task-relevant set for driving to driving. My account of attention predicts, therefore, that her uses of information to guide her driving were sufficient for attention, which is in line with the intuitive verdict.

Moreover, I think that if she were not allocating cognitive resources to the driving task in such a way, we would have the intuition that her uses of information before the deer incident were not sufficient for attention. What we would want to say about the latter case is that she was driving inattentively, and had to snap out of it and start paying attention so as to avoid the deer. In this case it would seem like she had been making the driving task a secondary task for herself, despite doing a good job at some aspects of the task (e.g. responding correctly to traffic lights and stop signs). And in this case my account of attention predicts that her uses of information to guide her driving were insufficient for attention, which is also in line with the intuitive verdict about the case.

I think that this line of reply generalizes to other cases where one might be tempted to imagine say that a subject engaged in an easy or effortless task performance doesn't seem to be paying attention to anything – e.g., a subject who allocates enough cognitive resources to the task of walking from one room of her house to another room. Of such a subject, we could ask what would have happened if, during the course of her walk, she had started thinking intently about a paper that she was writing. Perhaps nothing untoward would have happened – if, e.g., she really had been making walking a primary task for herself. But perhaps she would have accidentally wound up in the wrong room – which
would reveal that walking had actually been a secondary task for her, all along. I think that it seems intuitive to say that in the former situation, her uses of information to guide the performance of walking were *sufficient* for attention, and in the latter situation, her uses of information to guide the performance of walking were *insufficient* for attention.\(^{50}\)

Although I think that the challenge from expertise is ultimately unsuccessful, the way in which I’ve addressed it reveals a few interesting facts about my account of attention. I’ll discuss them in turn.

Firstly, I think that what the challenge from expertise shows is that one of the many effects of expertise is that it can enable an inattentive but surprisingly good mode of performing a task. I say “one of the many effects” because there is an open and interesting question about how many ways expertise alters the way we take actions. Wu (2015), for example, discusses empirical evidence that novice cricket players and expert cricket players deploy their visual attention in different ways while trying to hit the ball (note also that this evidence speaks to my claim that experts don’t *necessarily* use their expertise to perform a task entirely without attention).

I think another lesson from the challenge from expertise is that we should expect what it takes for an individual to allocate cognitive resources to a task so as to perform it well, and therefore which of a subject’s cognitive resources are elements of a task-relevant set of cognitive resources for that subject, to vary dramatically depending on various facts. For example, facts about the agent (like whether she’s practiced performing the task) and facts about the task (we know that while doing a good job of driving does not demand

\(^{50}\) The facts about the dispositions of the subject aren’t what, *most fundamentally*, make it the case that she did or did not attend to objects while walking. These facts just reveal some occurrent facts about the subject – her manner of allocation of cognitive resources to the task of walking – and it is those occurrent facts which make it the case that she did not did not attend to objects while talking.
being prepared for *every* eventuality, it does demand being prepared to respond to certain kinds of hazards on the road). In various cases, depending on how much we know about a task and an agent, it might turn out to be hard to figure out whether an individual is making a task primary for herself, and there may even be some cases where it seems genuinely indeterminate whether an agent is making a task primary for herself.\(^{51}\)

Thirdly, reflection on the challenge from expertise makes it clear that my way of thinking about attention allows us to easily account for ordinary thought and talk about attending to an object to a certain degree. As Wu (2014) has noted, the unmodified sufficient conditions are less able to accommodate ordinary thought and talk about degrees of attention – it seems like agents are either using information to guide the performances of task or they are not. On his view, therefore, attention is all or nothing. But on my view, if we wish to use “attention” in a degreed way rather than an all-or-nothing way, we can answer the question “To what degree did the agent attend to that object?” through citing the degree to which the agent made the task which that object involved a primary task for herself. If, e.g., a subject allocates 20% of the cognitive resources in the task-relevant set to the performance of a task we could say that, in using information from various objects to perform the task, she attended to those objects to a low degree. This gain in explanatory power is another reason to endorse the refined sufficient conditions for attention.

**6. Conclusion**

With (IS*) in hand, we’re finally in a good position to ask and answer some

\(^{51}\) Methodologically, it probably makes more sense to try to figure out whether people are attending through analysing the quality of their task performances than to try to figure out whether people are attending through analysing their distribution of cognitive resources (and this is just what psychologists do). My claim is just that the facts about the distribution of cognitive resources figure into a more fundamental explanation of the facts about attention than do the facts about the quality of task performances.
questions about the role that intellectual attention plays in our mental lives. In the first chapter, I pointed out that there was distinction to be made between intellectual attention and perceptual attention, but did not take a position on how to make that distinction. In the second chapter, I followed Wu’s approach to developing a sufficient condition. The goal in developing a sufficient condition grounded in the practice of science was to develop a sufficient condition with relatively broad appeal, and that provided a unifying and justifying explanation of a great deal of research on intellectual attention over the past hundred years. Then, in this chapter, I argued that the sufficient condition needed to be refined. The refinements were motivated both by intuitive considerations and by taking an even more detailed work at the practice of science that Wu’s approach recommended.

I have also, in this chapter, occasionally considered what might motivate modifying the sufficient for perceptual attention, and expect that my solution for refining (IS) should also extend to (PS), but I have restricted my focus to (IS) here because this dissertation is about intellectual attention and the role it plays in our mental lives.

In the next two chapters, I use (IS*) to address two questions, namely:

1. Can intellectual attention alter the phenomenology of conscious cognition?

2. Does intellectual attention play a role in linguistic understanding?

There are, I hope, but two of many uses it could be put to. This condition is designed to have wide appeal, to give theorists studying intellectual attention a way of ensuring that they are all studying the same phenomena.
Chapter 3: Intellectual Attention and Conscious Cognition

Abstract

In this chapter, I address the question of whether attention can alter the phenomenology of conscious cognition. I take up the hypothesis that attention causes some conscious thoughts to become more “central” than others, following Sebastian Watzl's (2014) understanding of the distinction between the centre and periphery of the field of consciousness. Then I show that introspection leads to divided results about whether attention causes some cognitive experiences to become more central than other cognitive experiences.

I try to move the debate on this question forward by using the sufficient condition for intellectual attention that I developed in the first two chapters of this dissertation. I use the sufficient condition to argue that there is behavioral evidence that there are two modes of consciously thinking of an object, only one of which we have reason to call an attentive mode of thought. Paired with the assumption that it's the attentive mode of thought that causes an experiences to become more central than other experiences, this result lends some weight to one side of the introspective dispute.
Chapter 3

0. Introduction

We can ask a wide variety of interesting questions about the relationship between perceptual attention and perceptual consciousness. For example, we can ask whether directing our perceptual attention towards an object can cause our perceptual consciousness of the object to change in certain distinctive ways.\footnote{Throughout, I will use “consciousness” to refer to phenomenal consciousness rather than access consciousness (see Block 1995 for this distinction).} According to William James, the answer to that question is “yes”. Here is his description of the way that perceptual attention seems to alter perceptual consciousness:

... it must be admitted that to some extent the relative intensity of two sensations may be changed when one of them is attended to and the other is not... in listening for certain notes in a chord, the one we attend to sounds probably a little more loud... (James, 1890, p. 425).

According to Gustav Fechner, however, the answer is “no”. Here is his description of the phenomenology of conscious perceptual attention:\footnote{See James 1890 Chapter 11 for discussion.}

A gray paper appears to us no lighter, the pendulum-beat of a clock no louder, no matter how much we increase the strain of our attention upon them (in James, 1890, p. 426).

A great deal of recent work in philosophy, psychology, and neuroscience has increased our understanding of their dispute.\footnote{See Wu 2014 Chapter 4 for a recent review of some of these developments (as well as positive contributions).} However, I think that this recent work has mostly neglected a closely related and very interesting question. The question is whether the
cognitive kind of attention - what William James called “intellectual attention” - can alter the phenomenology of conscious cognition.\footnote{See James 1890 Ch. 11 for the intellectual-perceptual attention distinction and see Wu 2014 pp. 84-85 for a discussion of cognitive attention.}

Just as it is plausible to assume that there is often something it is like to perceive, it is plausible to assume that there is often something it is like to engage in cognition. Declan Smithies has helpfully provided the following list of examples of cognition that seem phenomenally conscious:

- Considering a hypothesis
- Judging that a hypothesis is true
- Recalling a fact learned in the past
- Recognizing that the conclusion of an argument follows from its premises
- Inferring the conclusion of an argument from its premises
- Drifting aimlessly in thought
- Calculating the solution to a problem
- Deliberating about what to do
- Grasping a metaphor
- Getting a joke
- Understanding a sentence
- Having an unarticulated thought on the tip of your tongue
- Feeling confident, or certain, or doubtful, or incredulous
- Having a suspicion or a hunch (Smithies 2013 p. 2)

Once this additional plausible assumption about cognition has been made salient, it should be obvious that we can ask some interesting questions about the way that attention can alter these kinds of experiences.\footnote{Note also that to say that there is conscious thought is not to make the presumption that there is a \textit{sui generis} phenomenology of thought (see Pitt 2004 for a defense of such a view and Tye & Wright 2010 for a criticism of such a view). It is just to say that sometimes there is something it is like to think, or in general, that there is something it is like to cognize.}

The rest of this chapter is structured as follows. First, I articulate my question about intellectual attention and consciousness a bit more clearly, and design a method to answer...
it grounded in Sebastian Watzl’s (2014) understanding of the distinction between “centre” and “periphery” in the field of consciousness. Next, I show that using this method, which is grounded in introspection, leads to conflicting results about how to answer my question. Finally, I introduce some behavioural evidence, which I analyse using the sufficient condition for intellectual attention that I developed in the first and second chapters of this dissertation. My analysis of the evidence, I argue, gives us reason to think that intellectual attention can alter the structure of conscious cognition.

1. What does it mean for attention to alter consciousness?

There are at least two ways to understand the question of whether a particular kind of attention alters consciousness. The first, as we saw in the disagreement between James and Fechner above, was a way of understanding the question that amounted to a question about whether attention alters the degree to which consciousness presents an object as having a particular property. In the perceptual case, James and Fechner seem to come to different introspective judgments about how to answer the question.

The second way of understanding the question about whether attention alters consciousness amounts to a question about whether attention alters the relations that hold between particular experiences, rather than the experiences themselves. As I’ve mentioned earlier in this dissertation, when we shift our visual attention to different crosses on the figure below, while our gazes remain fixed, our experiences of some of the crosses seem to become more peripheral or backgrounded than others:
As I’ve mentioned before, Christopher Mole seems to think that the introspective verdict about how to describe cases like this one is less contentious than the introspective verdict about the question that James and Fechner were arguing about (2008). On his view, most people think that as we shift our perceptual attention from one cross to another, perceptual attention does seem to alter perceptual consciousness, in this structural sense.

Whether there is a connection between the ways we must answer these two questions about attention and consciousness is itself an open and interesting question. It might, for example, be the case that the facts about the structure of consciousness can explain the facts about which objects are presented as having certain properties to a certain degree, or vice versa, or it might be that these sets of facts are independent of each other.

In this chapter I restrict the scope of my investigation to the question of whether intellectual attention can alter conscious cognition in the structural sense of the question. I leave open the question of whether intellectual attention to an object can alter what properties the object seems to have, and and I leave open the question of what the relationship between our answers to those two questions might be.

Figure 8: Three crosses
Before going on to actually answer the question, I'll discuss in some more depth what I mean when I say that attention might alter the structural features of consciousness.

1.1 What is phenomenal structure?

A stream of consciousness, as I use the term, is a temporally extended experience that is itself composed of experiences. For example, the experience of writing a dissertation in a diner might be composed of the experience of feeling the seat beneath oneself, the experience of tasting coffee, the experience of coming to various conclusions about what to write next, etc. Total conscious states are sets of experiences that are all a part of the same stream of consciousness and that all occur at the same moment. A total conscious state that is a part of the temporally extended experience of writing a paper in a café, for example, might involve simultaneously making a judgment about an argument and tasting coffee.57

Sebastian Watzl (2014), among others, has argued that consciousness is aptly described as a “field” of experiences, and that the field has “structure”. To be more precise, what he seems to mean is that total conscious states are aptly described as field-like. For example, on this sort of view, when you’re sitting in an audience in front of an orchestra your field of experiences will probably include a visual experience of the members of the orchestra and an auditory experience of the piece that they are playing.

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57 I follow James (1890) in this use of “stream of consciousness” and Bayne (2012) in this use of “total conscious state”. Also, it would not be particularly philosophically significant for my project if it turns out that I am wrong to individuate experiences as finely as I individuate them in the above case. Perhaps, e.g., the subject in the diner is best thought of as having one complex experience rather than several simple ones. If this is so, then it would seem wrongheaded to ask whether the peripheral-to relation obtains between any of her experiences at a time. That’s because on this hypothesis, for any subject at a time, that subject would just be having one experience. That’s right, so far as it goes: but we can concede that it would be wrongheaded to ask that particular question while still maintaining that it would not be wrongheaded to ask whether the participants’ thinking about a particular object was attentive while their thinking about another particular object was inattentive. On this way of thinking, the ‘peripheral-to’ relation would obtain between different parts of a single conscious thought rather than between different conscious thoughts. This metaphysical concern about the individuation of thoughts, therefore, does not weigh in favour of answering my question one way or another.
Moreover, many of these philosophers seem to think that the field of experiences
has at least two parts – a “center” and a “periphery”. On this way of thinking, one
experience, or small group of experiences, can be said to be at the “center” of the field of
experiences, while all the rest of the experiences can be said to be further out, in some
sense, at the “periphery”. Here are some representative examples of how philosophers and
psychologists articulate the idea that the field of experiences seem to have this kind of
structure:

In most of our fields of consciousness there is a core of sensation that
is very pronounced. You, for example, now, although you are also
thinking and feeling, are getting through your eyes sensations of my
face and figure, and through your ears sensations of my voice. The
sensations are the centre or focus, the thoughts and feelings the
margin, of your actually present conscious field. (James 1890 p. 18)

Perhaps the best general description of the effect of attention is
afforded by Wundt’s comparison of consciousness to the field of
vision. As in the eye there is a point of clearest vision, where all
impressions are very distinct as opposed to the vagueness of the
objects seen with other parts of the retina, so in the mind there are
always a few processes which stand out clearly while the others are
blurred and indefinite. As the eye can wander over the various
objects before it, bringing first one then the other into the most
favourable position, so the sensations, of which we are conscious at
one instant, disappear from consciousness at the next. Attention may
wander over the mental field as the eye may wander over a surface
in the outside world. (Pillsbury 1907 p. 2)

It might be helpful if I were to give some more definite idea of the
manner in which I conceive a thought or an element of consciousness
to occupy the foreground of consciousness. This can only be done by
analogy. When speaking about an object in the vicinity it is usually
possible to point to it. The visual field, the auditory field, or whatever
sense-field it is, then organizes itself about the object. It becomes the
centre of attention. Very much of a parallel situation is found, I
suggest, in consciousness generally. When I have a thought, for
instance, the thought becomes the cognitive referent around which
consciousness organizes itself. (Evans 1970 p. 91)
... perform the following experiment in phenomenal contrast (a method introduced in Siegel 2006): imagine you are in a room with dark gray walls, ceiling, and floor and a single source of dim overhead light. In that room is sitting a cushion and a small table. On the table is a steaming pot of tea. Imagine that you are sitting on the cushion facing the teapot with your eyes open, fixated on the teapot, breathing steadily and slowly. To yield the phenomenal contrast, imagine that you are interested in observing the steam from the pot of tea. In the second version of this experience, imagine that you are interested in observing your breath, as in a session of yogic meditation.... I suspect that most experience the stimulus of interest to be in the foreground when interested in the steam, and the breath in the foreground when interested in the breath. This is not to say that most people experience the stimulus of interest to be in the spatial foreground; the stimulus of interest is experienced as though in the foreground of the mind. (Jennings 2015 p. 1268).

As these passages demonstrate, the view that it is correct to describe parts of the field of consciousness as more central than other is a popular and enduring one.

Sebastian Watzl’s account of the distinction between centre and periphery seems to be the most extensive and explicit, and so in what follows I will work with his view in particular (his account is developed in Watzl 2010, Watzl 2011a, and Watzl 2014). Here is what Watzl has to say about what makes one experience “further” from the centre of the field of consciousness than another experience:

The idea that the field of consciousness has attentional structure is highly intuitive. When I focus attention on an itch there seems to be a sense in which the itch experience is central in the field of consciousness, while the feeling of elevation, the experience of the jazz, and the experience of the letters become a mere periphery to that central experience. By contrast, when I start focusing on the melody being played by the saxophone, the itch experience moves from the centre to the fringe or margin of my field of consciousness. (Watzl 2014 p. 65)

So according to Watzl’s introspective observations, when we consciously focus our attention on one thing and then another, what it is like to be us seems to change in a
distinctive and systematic way. Our experiences of what we focus our attention on seem to move to the centre of the field of experiences, and our experiences of many other things that we were already experiencing seem to move further from the centre.

To put things a bit more precisely, Watzl thinks that a particular phenomenal property – “being in the centre of the field of experiences” – is to be explained with reference to various instances of a particular phenomenal relation – the “peripheral-to” relation (Watzl 2014 p. 66). On his view, the centre of the field of experiences is the experience (or experiences) that are not peripheral to any other experiences. Additionally, on his view, one’s “object of attention” is the object that the experience at the centre of the field of experiences is about (Watzl 2010 p. 150, 2014 p. 67).

Watzl’s account of the peripheral-to relation generates, therefore, a method of trying to find out whether a kind of attention (e.g. perceptual or intellectual) can cause the structure of part of the field of experiences to change. The method is this: one engages in a certain kind of imaginative exercise, e.g. the one Watzl described above, which involves imagining focusing your attention on one object and then on another object. Then one asks oneself questions of the form: “Did the imaginative exercise reveal to me that directing my attention one way and then another would have altered the structure of my field of experiences?”.

If “yes” seems to be the answer, one can then move to conclusions of the

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50 This is precisely the method that Watzl seems to ask readers to engage in when he discusses the peripheral-to relation; see, e.g., section two of his paper “Attention as structuring the stream of consciousness” (2010). This method does seem unnecessarily complicated. Instead of imagining what it is like to attend, and then reporting on what it is like, it would be simpler and probably less prone to error to just attend and then report on what it is like. But I do not dwell on this issue because I think that both of these methods can lead to the kind of introspective deadlock that I want to show how to move past in this chapter.
form “Well then: directing that kind of attention can change the structure of the field of experiences”.  

Reflection on Watzl’s case above seems to generate the conclusion that perceptual attention can alter the structure of the perceptual part of the field of consciousness. This is in line with Mole’s articulation of the common-sense picture of the relationship between attention and consciousness, which I discussed in the introduction above. In the next section, I attempt to apply this methodology to answering my question about intellectual attention and conscious cognition.

2. Introspecting on the structure of consciousness cognition

If we think of the field of experiences as a set of experiences, it is easy to talk about parts of the field. Parts of the field are subsets of the set of experiences that constitutes the field. In fact, I’ve already mentioned two parts of the field in this chapter: the centre and the periphery. Another interesting part of the field of experiences is the *cognitive* part of the field – that is, the part composed of the experiences that you have when you engage in cognitive activities like judging and remembering.

We should expect the methodology I discussed above to enable us to answer questions about the centres of *parts* of the field of experiences, just as we should expect it to answer questions about the centre of the field *as a whole*. Here’s the particular question

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59 Carolyn Jennings has used similar imaginative exercises to argue that *interest* can cause the field of consciousness to be structured into a foreground and a background. In particular, she uses the method of “phenomenal contrast”, by suggesting that we should imagine having the same kind of experience while being interested in two different aspects of it (Jennings 2015 p. 1268-69). The phenomenal contrast revealed by these two imaginative exercises is a difference in phenomenal structure.

60 Although see Wu (2014 p. 130) for some dissent on the point that this re-structuring of our field of experiences as a result of the way we direct our attention is as ubiquitous as Watzl claims it is. I discuss this dissent in more depth in the final chapter of this dissertation.
about a part of the field of experience that I’m interested in addressing in this chapter: “Can intellectual attention cause some cognitive experiences to be more central than others? Or are all of our cognitive experiences equally central?” In the rest of this section, I’ll review some answers that philosophers have given to this question on the basis of introspection.

Michael Martin and Ian Phillips have given introspective reports in favour of a negative answer to the question of whether intellectual attention seems to alter the structure of conscious cognition, but their treatment of the question was relatively brief. Martin’s and Phillips’s claim actually occurs within an argument about a separate debate that I have already discussed in this dissertation – the debate about how best define or otherwise give an account of intellectual attention. They think that intellectual attention constitutes cognitive consciousness, while perceptual attention structures perceptual consciousness.

In the first chapter of this dissertation, I criticized their view on methodological grounds: it seemed to rule out the possibility of unconscious intellectual attention from the start. This is their argument in favour of accepting of that way of distinguishing perceptual attention from intellectual attention (Martin 1997 p. 78; Phillips 2012 p. 288):

(1) Initial reflection on ordinary perceptual experiences shows that it seems to be the case that we are currently having experience of a plenitude of items beyond what we are currently focusing our attention on.

(2) Initial reflection on ordinary cognitive experiences seems to show that there is no such array of items for us to shift our attention across.

(3) Therefore we can distinguish between perceptual and intellectual attention in the following way: perceptual attention is a modification
of the perceptual stream of consciousness, but intellectual attention
*just is* the cognitive stream of consciousness.

(1) is relatively uncontroversial. As Christopher Mole (2008) argues, introspective
reflection on day-to-day perceptual experiences seems to reveal that the relationship
between perceptual attention and perceptual consciousness is as of a spotlight of attention
ranging over field of experiences of which one is already conscious. Above, I used a figure
with three crosses to help illustrate Mole’s point.61

But (2), I will argue, is more controversial than Martin and Phillips seem to think.
This is how they describe what their own conscious cognition seems to be like when they
argue in favour of (2):

> [P]erceptual attention seems to range over an array of objects of
> which we are already aware. Internal attention does not range over
> contents, some of which were already objects of thought… (Phillips
> 2012 p. 288).

> In [the perceptual case] it is tempting to think of experience in terms
> of a whole array of items stretching beyond what I have focused my
> attention on at a time - an array over which I could move my
> attention, as a beam or a spotlight. It is as if I am aware of the whole
> array at a time … whether I now focus my attention on one part of it
> or not … There seems to be no corresponding array of items to shift
> one’s attention over in thought… (Martin 1997 p. 78).

So Martin and Phillips seem to think that structure plays less of a role in conscious
cognition. That is, they seem endorse (2) because they think that all of our cognitive
experiences seem to be in the focus of attention. On this way of thinking, all of our cognitive

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61 See, however, De Brigarde (2010) and Wu (2014) for criticism – I address Wu’s method of criticism in more
depth at the end of the chapter..
experiences are equally central, and consequently shifts in attention would not cause shifts in the way that the peripheral-to relation obtains in a given subject’s field of experiences.

(2) would be undermined if other theorists have come to different conclusions about what cognitive experience seems to be like, and indeed, other theorists have come to that kind of conclusion. As I mentioned in the introduction, for example, Elijah Chudnoff has claimed that the phenomenology of performing a geometrical proof can involve having some cognitive experiences in the foreground of consciousness and some in the background. Here is a second description of the phenomenology of thought that problematizes (2), from Michael Maher’s book *Psychology: Empirical and Rational*:

... intellectual attention, even when engaged in comparison, apprehends its objects in the form of a unity of some sort. The focus of attention seems to be at any moment a single thought, though that thought may carry a fringe of relations and a nucleus of elements dimly felt to be distinct from each other... (Maher 1923 p. 349).

Maher seems to think any attentive cognitive experience we have is accompanied by a “fringe” which is felt in a different way than the thought that we are attending to. And it seems plausible to suggest that various parts of this fringe are items that we could direct intellectual attention towards, and cause to become more central in our fields of consciousness. So on Maher’s way of thinking, there does seem to be an array of items in conscious thought that attention can range over.

Chudnoff and Maher may well be wrong about what the phenomenology of conscious
thought is like. My goal in quoting their introspective reports is just making it evident that Martin’s and Phillips’s argument is much more controversial than it might first appear, and that in fact there are theorists who would dispute their claim about the phenomenology of conscious thinking.

The core problem is that introspective judgments about how to characterize phenomenology notoriously vary from person to person. Thus, these initial moves based on introspection doesn’t seem sufficient to answer my question about whether intellectual attention alters cognitive consciousness, or to provide Martin and Phillips adequate reason to distinguish perceptual attention from intellectual attention in the way that they do. Martin’s and Phillips’s argument for their definition of intellectual attention seems to rest on the hope that this particular introspective judgment will not be variable in that way, but, as I’ve shown, this introspective judgment is variable in just that way.

For all that, (2) might be true. One way to make some headway would be to make some more sophisticated introspective arguments – e.g., to provide a debunking argument for the introspective judgments of either Martin and Phillips or Maher and Chudnoff. Such an argument would provide an explanation of why one of the pairs of philosophers is incorrectly describing the phenomenology of their own conscious cognition. Another

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62 For more potentially corroborating reports, see e.g. James (1890 p. 403), Evans (1970 p. 91), Kriegel (2009 p. 173), Bayne (2010 p. 79), and Watzl (2014 p. 65) for endorsements of the idea that the field of consciousness is usually aptly described as structured into a centre and a periphery. I say ‘potentially’ because these authors do not explicitly consider the question of whether perceptual and cognitive consciousness are structured in different ways – perhaps some of them meant to endorse the idea that only perceptual consciousness is structured into a centre and a periphery.

63 See, e.g., Schwitzgebel (2008) for a vivid discussion of this point, as well as a discussion of introspection’s (un)reliability.
potential way would be to attempt to make use of introspective data from specially trained subjects rather than relatively naïve subjects.64

Alternatively, another way to to make some progress on the question of whether (2) is true would be to advert to some behavioral or neurological evidence. Behavioral or neurological evidence that there were two modes of consciously thinking (one attentive, the other inattentive) would lend some weight to the introspective judgments of Chudnoff and Maher. Behavioral or neurological evidence to the contrary would lend some weight to the introspective judgments of Martin and Phillips.

In the next section of this chapter, I investigate the option of moving this debate forwards with behavioral evidence. I do this not because I’m particularly skeptical of the options for moving the debate forward using more sophisticated introspective techniques, but instead because I think that the work I did developing a sufficient condition for intellectual attention has put me in a good position to supply such behavioral evidence.

3. How to find behavioural evidence that there is structure in conscious cognition

I think it’s reasonable to assume that theorists in both camps in the dispute about the structure of conscious cognition would accept the claim that we can consciously think of more than one object at once. What Martin and Phillips take issue with is the claim that in doing such a thing we could also think attentively about one of them and inattentively about the other. So the kind of evidence that would be compelling to Martin and Phillips, or someone who agrees with them about how to describe the phenomenology of conscious

64 See, e.g., Schwitzgebel (2004) and Heavey, Hurlburt, and Lefforge (2010) for discussions of what that sort of training might entail. The training involves learning to use specific terms to describe what it is like to have an experience rather than, e.g., training in working questions that pertain to the philosophy of mind.
cognition, would be some *non-introspective* evidence that there are two functionally distinct modes of conscious thought. If that is so - *and* if there seems to be reason to characterize one of the modes of conscious thought as “attentive” and the other as “inattentive” - we will have corroborated the introspective judgments of Maher and Chudnoff.

The sufficient condition for intellectual attention that I developed in the first two chapters of this dissertation can be used to generate such evidence. I’ll repeat the sufficient condition here:

\[( IS^* ) : \text{Subject S intellectually attends to X if S cognitively selects X to}\]
\[\text{guide performance of some primary task.}\]

Here, again, is a simple example of this sufficient condition at work: Sam is sitting at a table with an apple on it. Sam is instructed to look at the apple, close her eyes, and then to grasp the apple. Sam does so, and in so doing, allocates all or most of her task-relevant cognitive resources to the task of grasping the apple. In this case, it seems like Sam must have used information from a personal level cognitive representation to guide her reaching action (and recall that this kind of use of information is just what “cognitively selects” means). Moreover, it seems like in this case Sam must have been making picking up the apple a primary task for herself. Therefore, Sam intellectually attended to the apple.\(^{65}\)

In order to use (IS\(^*_\)) to help resolve this debate about the structure of conscious cognition, we’ll actually need to advert to a slightly more specific version of the sufficient condition. Uses of information from unconscious representations to guide task

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\(^{65}\) See Chapter Two for a more complete discussion of this sufficient condition, and see pp. 27-30 for more discussion of my use of “cognitive”, according to which cognitive representations are stimulus-independent.
performances are what seem sufficient for unconscious attention, and uses of information from conscious representations to guide task performances are what seem sufficient for conscious attention. That idea seems to make sense of why, e.g. Kentridge (2011), Norman, Heywood, & Kentridge (2013), and Mole (2014) say that when a subject uses information from a representation of some object but doesn’t seem conscious of it, there is evidence in favour of the view that unconscious attention exists. The subjects they have in mind are subjects with blindsight using information from representations of objects in their blind fields, or sighted subjects that use information from representations of objects that are ‘invisible’ because of their rapidly flickering boundaries (see Mole 2014 p. 45 for more on ‘invisible objects’).

So the sufficient condition that is relevant at the present juncture is this one:

**Conscious Intellectual Attention (CIA):** Subject S consciously intellectually attends to X if S consciously cognitively selects X to guide performance of some primary task.

“Conscious cognitive selection” refers to a subject’s use of information from a representation that is personal-level, cognitive, and conscious. Paired with the assumption that consciously attending to an object causes us to have an experience of that object at the centre of our field of our experiences, (CIA) will allow us to gather some behavioural evidence about the ways that the peripheral-to relation can obtain within a given field of experiences.

4. The behavioral evidence

Hugh Garavan’s paper “Serial Attention Within Working Memory” (1998) provides some behavioral evidence that will help us answer my question. Garavan’s study is about subjects who form and maintain two mental counts at once. For example, consider the
image from Garavan’s paper below, and how you might go about answering the question posed within the image (which is “how many rectangles and triangles are on this figure?”):

![Figure 9: Rectangles and triangles](image)

Most people count the triangles, count the rectangles, and then report their totals (or vice versa). Most people do not slowly scan the image from one side to the other, incrementing both their counts as they go. If you try the latter strategy, you’ll notice that it is effortful and prone to error: although you are conscious of both counts throughout using that procedure, you have to switch your intellectual attention between the two counts. And that seems to make the task difficult.

What introspection suggests about this case is, I think, just another instance of what Mole called the common-sense picture of the relationship between attention and consciousness. Shifting our intellectual attention from one count to another seems to alter the structure of the field of experiences, just like shifting visual attention from one object to another seems to alter the structure of the visual part of the field of experiences.

Garavan’s study is simply a more rigorous exploration of this kind of phenomenon. In Garavan’s study, participants formed and maintained two counts at the same time.
Participants were informed of their two tasks - keeping count of the triangles and rectangles that they saw - and then exposed to one shape (a triangle or a rectangle) at a time. Participants controlled when they were exposed to the next shape in the series by pressing a bar as soon as they had updated their count (i.e., they had control of the stimulus onset time).

There were two kinds of transitions between shape-slides within the series of shape-slides. In a “No Stimulus Switch” transition, a rectangle followed a rectangle or a triangle followed a triangle. In a “Stimulus Switch” transition, a rectangle followed a triangle or a triangle followed a rectangle. I’ve included an illustration of this below: transition #1 is a “No Stimulus Switch” transition, while transitions #2, #3, and #4 are “Stimulus Switch” transitions. On my way of speaking, a transition is the duration between two stimulus onset times.

![Figure 10: Garavan’s experiment](image)

Garavan found that participants took longer to respond to two slides in a “Stimulus Switch” transition than in a “No Stimulus Switch” transition. His explanation of the delay was that participants were only able to attend to one count at a time, and that in order to update
their count in the "Stimulus Switch" condition, participants first had to switch their focus of attention to a different count than the one that they were already attending to. Garavan performed additional experiments to rule out other perceptual explanations of the delay - e.g., the explanation that the delay occurred because it is easier to focus one's gaze on two triangles consecutively than a triangle and then a rectangle. In short, this effect does not seem to be a purely perceptual phenomenon, and so our explanation of why it occurred needs to advert to cognition.

But why should we really think that this explanation should advert to intellectual attention rather than some other aspect of cognition? This is where (CIA) will help us. (CIA), recall, says that conscious cognitive selection for the sake of the performance of a primary task is sufficient for intellectual attention.

First, note that in this experiment, participants working through the two slides of a Stimulus Switch transition had to use information from one cognitive representation of a count and then another cognitive representation of a count in order to guide their performances of their two counting tasks. The reason that the representations in question seem cognitive is because their existence is doesn’t actively depend on any particular stimulus – indeed, the point of these representations is to track information about several stimuli that are only ever briefly perceptually available (and some that are never perceptually available – the counts themselves).

Second, note that participants working through the two slides of a Stimulus Switch transition had to use information from one conscious representation of a count and then another conscious representation of a count in order to guide their performances of their two counting tasks. The representations in question seem conscious because, throughout
the procedure, as participants updated any individual count, they verbally reported the current values of both counts:

“As previously described for Experiment 1, when asked to count aloud, all subjects adopted the technique of verbalizing both counts following each figure, that is, subjects would update one count and rehearse the current value of the other count. For convenience, these different operations will be referred to as “updating” and “rehearsing.” (Garavan 1998 p. 10)

I take this kind of capacity to describe some of the content of a representation via introspection to be a good (although defeasible) reason to think that the representation in question is a conscious one. It seems phenomenologically implausible to suggest that while verbally reporting on their counts the participants were using unconscious representations to guide their actions, in the way that a person with blindsight, forced to guess about where a nearby object is located, uses information from an unconscious representation to guide their actions.66

Thirdly, note that Garavan engaged in the practice of discarding data from participants that seemed to be consistently making updating the counts secondary tasks for themselves:

Only correct trials were analyzed…. [and] [a]ll RT distributions were first trimmed by discarding RTs greater than three standard deviations from the mean. Only trimmed distributions were analyzed. (Garavan 1998 p. 14)

66 Another reason for skepticism about my description of the phenomenology of performing this experimental task would be the thought that participants are only ever conscious of the count that they are updating, and that the count that they are not updating is stored in memory and consequently unconscious. I think, however, that it is more likely that both counts were kept in a more accessible state called “working memory” throughout the procedure, and that such accessibility frequently goes along with consciousness. But the question of the relationship between intellectual attention, both kinds of memory, and consciousness is a substantial enough one in its own right that I cannot address it here (see Fougnie 2008 for discussion).
This passage shows that Garavan deliberately restricted the range of task completions that he was analyzing. Garavan wasn’t interested in studying uses of information from conscious cognitive representations that were used to guide the performances of task completions that were shoddy – either because they were incorrect, or because they were too slow. What this suggests is that he only wanted to consider the data of participants that were making updating their counts primary tasks for themselves at various points throughout the procedure. As I argued in the second chapter of this dissertation, this is a practice that seems to be shared by many other scientists that study intellectual attention, including Marcia Johnson and Brian McElree.

What all this goes to show is that Garavan’s study provides evidences that a subject can be cognitively conscious of two counts at once, but only attending to one of the counts at a time. The fact that they were able to report on the values of both counts suggests that they were conscious of both counts throughout. But the fact that they occasionally had to pause before updating one of their counts indicates that they were unable to make both counting tasks primary for themselves simultaneously.\footnote{As I mentioned above, I follow Garavan in assuming that shifts in attention at least typically take some time.} Successfully following Garavan’s instructions required shifting some of their cognitive resources from one counting task to the other counting task. By (CIA), therefore, \textit{successfully following Garvan’s instructions required consciously intellectually attending to one count and then consciously intellectually attending to the other count.}

I take all this to show that during such a moment, the participants were consciously thinking of both counts, but only consciously attending to one of the counts. Paired with the
assumption that attention causes an experience to become more central in the field of consciousness than other experiences, we get the result that the peripheral-to-relation can obtain in conscious cognition, contra Martin’s and Phillips’s descriptions of the phenomenology of conscious cognition.68

Perhaps, in light of this evidence, Martin and Phillips could retrench to a slightly different position, and argue that while perceptual attention ranges over items we are not attending to, intellectual attention ranges over items to which we are attending at least to some degree—perhaps “diffusely” rather than “focally”. Maintaining such a view would require (1) giving an account of what “diffuse” intellectual attention amounts to, (2) providing evidence that diffuse intellectual attention exists, and (3) arguing that while cognitive experiences are always either focally attentive or diffusely attentive, sometimes perceptual experiences are conscious and yet attentive in neither way.

(3), however, seems like a difficult argument to make. The main philosophical use to which diffuse perceptual attention has been put has been to help maintain the thesis that perceptual attention is necessary for perceptual consciousness. On this view, diffuse perceptual attention gives us the resources to explain why perceptual experiences outside the focus of attention might still count as attentive (see, e.g., De Brigard and Prinz 2010 and Prettyman 2014 for examples of this claim about the philosophical significance of diffuse

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68 A complication here is that, strictly speaking, (CIA) gives us reasons to say that some mental processing is sufficient for attention, but not that some mental processing is not sufficient for attention. Perhaps, after all, there are other well-motivated sufficient conditions for attention that would give us a reason to say that the thought about the other count was sufficient for attention, as well. But it does not seem like a sufficient condition derived from any of the extant metaphysics of attention will say that the thought about the other count was sufficient for attention. For example, on Smithies’ (2011) view, attention is a mode of consciousness which makes information fully available to guide our mental and bodily actions. But the way of being conscious of the other count doesn’t make information available for incrementing the count, and so it doesn’t make information fully available to guide our mental and bodily actions. In general, given that attention is a special mode of engagement with an object, our default presumption about any given instance of mental processing should be that it is insufficient for attention.
perceptual attention). So this alternative way of maintaining that there is a disanalogy between the ways that conscious perceptual and intellectual attention alter consciousness requires arguing that the current way of understanding perceptual diffuse attention is radically mistaken.

While it might not be impossible to make such an argument, the burden is on Martina and Phillips to provide such an argument. For now, it seems reasonable to think that attention alters the structure of conscious perception and conscious cognition in just the same way: it causes some experiences to become more central in the field of consciousness than other experiences.

6. Do shifts in conscious attention necessarily cause structural change?

As I’ve remarked a few times above, I’ve assumed that shifts in conscious attention alter the structure of conscious cognition. Someone with intuitions like Martin’s and Phillips’s could maintain their view of the phenomenology of conscious cognition through arguing that *although* we can consciously and attentively think of one thing while consciously and inattentively thinking of another, it’s not the case that shifts in attention necessarily cause one experience to become more central than another one. Ultimately, in this chapter I’ve only provided an argument for the former claim, and not the latter one.

As we saw earlier in the paper, the latter claim is widely endorsed by many theorists that talk about attention. Early psychologists like William James and David Pillsbury, and a variety of philosophers including C. O. Evans, Sebastian Watzl, and Carolyn Jennings have all claimed that (i) shifts in conscious attention seems to alter consciousness and that (ii) the language of centrality should be used to characterize this alteration. Their claims seem to be largely grounded in introspection, and I agree with them about the introspective
verdict here. These claims are not, however, undisputed. Wayne Wu, for example, has this to say about the phenomenal effects of conscious attention:

There is something very compelling about Watzl’s characterization of the phenomenology of attention, but it is also in a way elusive. In discussing phenomenal salience, I suggested that the phenomenology of attention is a product of very special cases where one reflects on attention and its targets. In reflecting in this way, one focuses on the targets, although in a way that need not involve a change in the phenomenology of experience per se. Rather, focalization, concentration and now, centering, results from the special status of the target of attention, namely, that it feeds in a direct way into one’s actions such as reflective thought. Watzl might be right that there is something like a center-periphery structure, but I claim that this is a reflection of special cases. Alternatively, Watzl can claim that I have simply missed a common structural feature of all perceptual experiences where attention is differentially deployed. At this point, the debate mirrors some- thing like the exchange between James and Fechner, a difference in basic intuitions about the phenomenology of attention. The challenge then is how to resolve the impasse when one hits rock-bottom disagreements about how consciousness seems to be. (Wu 2014 p. 130).

On Wu’s view, attention only sometimes results in phenomenal changes, and the language of centrality is not the right language to characterize the changes that attention does occasionally cause. As Wu notes, it is difficult to know how to resolve “rock-bottom disagreements” like this one.

The question of how to resolve this disagreement is worth further thought, but because it is such a difficult question in its own right, addressing it is beyond the scope of this dissertation. In this chapter, the bulk of my effort has been directed at establishing that we can consciously and attentively think of one object while consciously and inattentively thinking of the other. This is a conclusion that can be maintained even if it turns out to be false that shifts in attention always alter the structural features of consciousness.
7. Conclusion

In this chapter, I’ve attempted to make some headway on the question of what, in various contexts, occupies the centre of a field of experiences. In so doing, I’ve shown that understanding the notion of the “centre” of a field of experiences in purely introspective terms leads to some methodological troubles. Then I used the sufficient condition for intellectual attention that I developed over the course of the first two chapters of this dissertation to give us some behavioral evidence in favour of one way of answering the question. In so doing, I’ve also demonstrated that the sufficient condition that I’ve developed is philosophically useful. In the next chapter, I’ll make another such demonstration through arguing that the sufficient condition can help us answer a question about the role that attention plays in the comprehension of speech.
Chapter 4: Intellectual Attention and Linguistic Understanding

Abstract

As I mentioned in the introduction to this dissertation, the distinction between perceptual attention and intellectual attention puts us in a position to ask some interesting questions about intellectual attention and linguistic understanding – e.g., whether intellectual attention is ever required to comprehend some speech.

In this chapter, I argue that the same kind of intuitive arguments that support the view that perceptual attention is required to understand certain singular terms can be used to support the view that intellectual attention is required to understand certain singular terms. I also argue that Gareth Evans endorsed just such a view in The Varieties of Reference, and that the interpreters who claim that intellectual attention plays no role in his account of understanding certain singular terms – Christoph Hoerl and Teresa McCormack – are mistaken.

This chapter is partly interpretative, because I want to use the concept of intellectual attention to settle a question about how to interpret Evans’s account of understanding information-invoking singular terms. However, the chapter is not entirely interpretative. I think that the thesis that intellectual attention plays a role in understanding terms like memory-demonstratives, anaphors, and names is a plausible one. In the final section of this chapter, I show how my view of attention can give us additional reasons to endorse the thesis that linguistic understanding sometimes requires attention to objects.
Chapter 4

0. Introduction

As I mentioned in the introduction to this dissertation, the distinction between perceptual attention and intellectual attention puts us in a position to ask an interesting question about intellectual attention and linguistic understanding: namely, whether intellectual attention is ever required to comprehend some speech. The perceptual analogue of this question has been extensively discussed in the recent literature, but my own question has been almost entirely ignored.

There are a variety of ways that my relatively broad question could be made more precise. We could ask, e.g., whether linguistic understanding ever requires joint rather than solitary intellectual attention, or whether intellectual attention to propositions plays a role in the best account of linguistic understanding. In this chapter, I restrict the scope of my discussion to the relatively simple question of whether intellectual attention is required to understand uses of singular terms that refer to objects that aren't perceptually available.

I begin by arguing that Gareth Evans, in *The Varieties of References*, has already argued for a “yes” answer to my question, and that his reasons for his positive answer are

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69 In this introduction to Chapter 4, I repeat some of the material from the introduction of this dissertation, where I defined some relevant terms and discussed the treatment of the perceptual analogue of the question I address here.

70 See Eilan, Hoerl, McCormack & Roessler (eds. 2005) for some discussions of the phenomenon of joint attention.

71 By “singular term”, I mean names, definite descriptions, demonstratives that refer to present and absent objects, and pronouns.
connected to his commitment to what he called “Russell’s Principle”. But, as I also argue, most interpreters of Evans don’t seem to have noticed this fact, and have misinterpreted his account of what it takes to understand a singular term that refers to an object that isn’t perceptually available. I’ll show that according to Evans, the same kind of arguments based on intuitions about phenomenology that support the view that perceptual attention is required to understand certain singular terms can be used to support the view that *intellectual* attention is required to understand certain singular terms (like names, anaphors, and demonstratives referring to past events and objects that aren’t available to be perceived).

Then, at the end of the chapter, I’ll provide some alternative, non-phenomenological grounds to endorse the thesis that intellectual attention is – at least sometimes - required to understand uses of singular terms referring to objects that aren’t perceptually available. My argument is based on the sufficient condition for intellectual attention that I develop in the first half of this dissertation and some empirical facts about what happens when a person tries to follow two conversations at the same time. Part of my aim in this section of the chapter is to advance a plausible thesis about intellectual attention and linguistic understanding. But another part of my aim is to make it clear that the view of attention and linguistic understanding that I attribute to Evans is a theoretically appealing one; and in particular, *more* theoretically appealing than the other views that have been attributed to him by interpreters like Christopher Peacocke, Christoph Hoerl, and Teresa McCormack.

Before setting out to accomplish the two goals I just described, I’ll explain what I

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72 I explain what this principle is in the first section of the chapter below.
mean by “linguistic understanding” and briefly discuss the way the perceptual analogue of my question about attention and linguistic understanding has been addressed in the literature.

By “linguistic understanding”, I mean the mental state that a person occupies when they comprehend some speech. There are several different accounts of what comprehending some speech amounts to. According to some philosophers, it is knowing what was said by the speaker’s production of the utterance.\(^{73}\) According to some other philosophers, it is having a perceptual or quasi-perceptual experience of the utterance’s meaning.\(^{74}\) According to another philosopher, it is having a cognitive experience of the utterance’s force and content.\(^{75}\) Whichever of these views is the right one, the question of whether perceptual attention is ever required to comprehend speech, and the question of whether intellectual attention is ever required to comprehend some speech, are both philosophically interesting questions that can be raised.

The perceptual analogue of the question that I address in this chapter has been answered positively by, for example, Gareth Evans (1982) and John Campbell (2003).

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\(^{73}\) See Peacocke (1976) for a version of the knowledge thesis and criticism of simpler views according to which understanding is just knowing what was said. See Recanati (2004 pp.5-9) for an explication of the notion of “what was said”, and how it differs from “sentence meaning” and “what is implicated”. Consider the sentence “I am Canadian”. Intuitively, what a use of this sentence conveys to an audience in any context, just in virtue of linguistic convention, is that the speaker is Canadian. We can call this sort of meaning “sentence meaning”. However, it is intuitive to suggest that uses of this sentence almost always, due to context, convey more than just the sentence’s meaning. If I utter the sentence, then it conveys the proposition that “Mark Fortney is Canadian”, which is true, but if Recanati utters the sentence then it conveys a different and false proposition. We can call this sort of meaning “what is said.”

\(^{74}\) See Hunter (1998) and Fricker (2003) for versions of the meaning perception thesis. On this approach we might characterize the content of the audience’s experience (in part) what was said by the utterance.

\(^{75}\) See Longworth (2005) for this view and Longworth (ms) for a closely related view. We can think of the notion of “content” here as something analogous to “what was said”.

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Evans and Campbell both think that perceptual attention plays a role in the having a perceptual demonstrative thought, and consequently also in coming to understand a use of a perceptual demonstrative. Here is how Evans puts the view:

... in order to have a demonstrative thought (one that rests upon perceptual information), the subject must be able to make the object out in what he perceives; and there is necessarily a gap between grasping 'The blonde who looks thus and so is F' and 'That blonde is F', because there is always room for an intelligible realization: 'Ah! So that's the blonde you mean! (Evans 1982 pp. 308-309).

I think that Evans’s claim that an audience’s understanding a perceptual demonstrative requires “making the object out” in what she perceives is best understood in terms of conscious perceptual attention (rather than just any kind of perception). Recall, again, Christopher Mole’s claim that on the common-sense view of perceptual attention, perceptually attending to an object causes it to be foregrounded (or made central, or highlighted) in perceptual consciousness. The phenomenon of visually foregrounding something is what Evans seems to be referring to with the phrase “making the object out”, and so it seems right to say that Evans thinks that visual attention plays a role in understanding perceptual demonstratives.76

Secondly, here is how Campbell put this view about perceptual attention and linguistic understanding, along with what he took to be the intuitive motivations for the view. As we’ll see, he appealed to the same sort of common-sense view about attention and consciousness that Evans did:

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76 As I mentioned in the introduction, strictly speaking Evans says that in order for a subject to think a demonstrative thought about an object, they must be able to make out the object in what they perceive. But I don’t think he means that such a capacity, unexercised, could really enable a demonstrative thought: when we make realizations like “Ah! So that’s the blonde you mean!”, we seem to be actually exercising the capacity to make the blonde out. So I think it’s best to interpret Evans’s remark as one about what’s necessary for a demonstrative thought but not as one about what’s sufficient for a demonstrative thought.
I think that the simplest way to grasp the common-sense difference between the blindseer and the ordinary subject is to consider an ordinary case in which you and I are sitting at a dinner table with a large number of people around and you make a remark to me about ‘that woman’. There are a lot of people around; I can’t yet visually single out which one you mean. So on anyone’s account, I do not yet know which woman you are talking about. Suppose now that we add to the example. My visual experience remains as before: a sea of faces. I cannot consciously single out the person you mean. All I get consciously is the sea of faces. ... It is only when I have finally managed to single out the woman in my experience of the room, when it ceases to be a sea of faces and in my experience I focus on that person, that I would ordinarily be said to know who was being referred to. So it does seem to be compelling to common sense that conscious attention to the object is needed for an understanding of the demonstrative (Campbell 2003 pp. 8-9).

Campbell, like Evans, seems to think that singling an object out, and thereby making it more highlighted (or central, or foregrounded) in the field of consciousness is required for linguistic understanding. Like Evans, when he describes what it is like to understand a perceptual demonstrative, Campbell seems to appeal to what Mole called the commonsense picture of the relationship between perceptual attention and perceptual consciousness. Their phenomenological observations give us a reason to endorse the view that perceptual attention is required to understand a use of a perceptual demonstrative.

Evans’s and Campbell’s view about the relationship between perceptual attention and comprehending uses of demonstratives, as well as related views about the relationship

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77 There is an open question about how conclusive considerations like these really are. As Wu (2014 pp. 233-35) has noted, if one thinks that unconscious attention is possible it becomes intelligible to ask whether it is possible to understand a demonstrative through consciously perceiving the referent of the demonstrative while unconsciously attending to the referent of the demonstrative. If such a method of understanding is possible, then the phenomenal effects of attention to which Evans and Campbell refer might not actually be necessary for linguistic understanding. My focus in this part of the chapter is just on the fact that Evans and Campbell seem to be making this kind of appeal to the phenomenology of understanding a perceptual demonstrative, and not on whether the appeal is actually conclusive. Later in the chapter I will discuss some novel reasons to think that attention can be required for linguistic understanding.
between perceptual consciousness and demonstratives more generally, have been extensively discussed in the recent philosophical literature. But analogous questions about intellectual attention and other kinds of terms have been relatively underexplored. Now that I’ve developed a clear account of intellectual attention in the first two chapters of this dissertation, and independently investigated the relationship between intellectual attention and cognitive consciousness in the third chapter of this dissertation, we’re in a good position to address those underexplored questions.

The rest of this chapter is structured as follows. First I’ll give the right account of Evans’s view about the relationship between intellectual attention and understanding certain kinds of singular terms. Secondly, I’ll explore some additional reasons to endorse the view that intellectual attention is required to understand some singular terms through using the sufficient conditions from the first two chapters of this dissertation as well as some behavioral evidence. Lastly, I’ll discuss a couple of ways in which Evans’s claims about the relationship between intellectual attention and linguistic understanding have been misinterpreted.

1. Evans’s account of understanding

We’ll be in a better position to understand Evans’s remarks about attention once I’ve explained his interpretation of Russell’s Principle. That’s because doing so will make it clear what sort of argumentative work he hoped that remarks about the phenomenology of attending would help accomplish. In this section, therefore, I’ll explain Evans’s

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78 See e.g., Siegel (2002), Dickie and Rattan (2009), Dickie (2011), and Smithies (2011b).
interpretation of Russell’s Principle, and then in the next section I’ll look at his claims about the phenomenology of attention.

Evans endorsed Russell’s Principle because he found the following intuitive picture of the two different ways of thinking about an object to be an appealing one:

Many philosophers today look at the theory of reference through essentially Russellian eyes. They have the idea that fundamental differences in the ways in which referring expressions of ordinary language function ultimately rest upon fundamental differences in the ways in which it is open to us to think about particular objects. Like Russell, they recognize the possibility, perhaps as a limiting case, of thinking of an object by description: as one may think of a man, some African warrior perhaps, when one thinks that the tallest man in the world is thus and so. But, again like Russell, they cherish the idea of a more 'intimate', more 'direct' relation in which a subject may stand to an object (a situation in which the subject would be *en rapport* with' the object), and the idea that when a subject and his audience are both situated vis-a-vis an object in this way, there exists the possibility of using singular terms to refer to, and to talk about, that object in a quite different way, expressing thoughts which would not have been available to be thought and expressed if the object had not existed. (Evans 1982 p. 64)

Evans wanted to give an account of what it is to be in a “more intimate” or “more direct” or “*en rapport*” relationship with an object of thought. On his view, when we are thinking of an object in such a way, our thoughts are about object by the lights of Russell’s Principle, according to which “a subject cannot make a judgment about something unless he knows which object his judgment is about” (Evans 1982 p. 89). Of course, maintaining such a commitment requires giving an explanation of what it is to have such “knowledge which”.

Evans’s way of giving an explanation of what it is for a subject to know which object their judgment is about is to say that the subject must have “discriminating knowledge” of such an object – i.e., a capacity to pick out the object of that judgment from all other things. He thought, for example, that if we can perceive an object, or if we have mastered the use of
a proper name of an object, then we have discriminating knowledge of the object (Evans 1982 p. 91, p. 403). He calls the kind of thoughts we have when we are in such a position “Russellian”, and he calls the terms such that an audience needs to think a Russellian thought in order to understand it a “Russellian singular term” (Evans 1982 p. 91). On his view, Russellian thoughts are “object-dependent” - i.e., could not be thought if the object they were about did not exist (Evans 1982 p. 64).

Throughout The Varieties of Reference, one of Evans’s primary goals was to argue that some “information-invoking” singular terms are “Russellian” singular terms. According to Evans, “information-invoking” singular terms are terms such that, when a speaker uses them in an utterance, the audience needs to use some information available to her in order to understand the utterance (Evans 1982 pp. 305-306). “Russellian” singular terms are terms that belong to a category of singular terms such that nothing is said by someone who utters a sentence containing such a term unless the term has a referent (Evans 1982 p. 71).

For example, if perceptual demonstratives are Russellian singular terms, then a speaker who hallucinates and seems to see a dagger and utters “That’s sharp”, intending to refer to the dagger that doesn’t exist, has actually said nothing at all. This view is, as Evans frequently acknowledges, a startling one. It certainly seems like there is something it is like to understand an utterance like “That’s sharp”, said of a hallucinatory dagger. Nevertheless, Evans thought that maintaining the view that some singular terms are Russellian was important enough that this startling aspect of his view was something to be explained.

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79 Here Evans refers to perception rather than attentive perception. I think that it’s best to interpret Evans as speaking loosely here – after all, as I’ve already pointed out, he’s argued that it’s attentive perceptual experience and not just perceptual experience that really enables us to understand perceptual demonstratives.
away, rather than something that we should take to be a sign of a genuine problem with his view (Evans 1982 p. 129-132).

Throughout *The Varieties of Reference*, Evans offers a wide array of arguments that various kinds of information-invoking singular terms are Russellian. In Chapter 6, for example, he argues that “here” and perceptual demonstratives are Russellian (Evans 1982 p. 170, p. 173). In Chapter 9, Evans takes a different approach, and offers a general argument that any information-invoking term is Russellian. He begins his argument by describing intuitions we have about the way that audiences understanding information-invoking singular terms are deploying their attention – both perceptual *and* intellectual - and then uses these intuitions as a starting point for moving on to the conclusion that information-invoking singular terms are Russellian singular terms.

In this chapter of the dissertation, I want to remain neutral on the question of whether it would actually be a good idea to cash out Russell’s intuitive picture of the distinction between two ways of thinking about an object in the way that Evans wants to. I will also remain neutral on whether Evans’s arguments that information-invoking singular terms are Russellian singular terms are actually successful.

What I will do instead is just emphasize the fact that attention seems to play an important role in his account of understanding any information-invoking term. While he rarely used the word “attention”, I’ll argue that his descriptions of cases understanding an information-invoking term really *do* seem to involve intuitions about attention, and that some of this other claims reveal his commitment to the claim that attention is required to understand an information-invoking singular term. Then, in the final part of the chapter, I’ll look at whether the sufficient conditions for attention that I discussed in the first two
chapters of this dissertation can give us additional reasons to endorse such a view about
the relationship between attention and linguistic understanding.

1.1. Evans on the phenomenology of understanding

Consider this range of cases from The Varieties of Reference, in which Evans
describes an audience understanding a use of an information-invoking term (we already
encountered the memorial case above):

(A) There is a characteristic almost all [the uses of referring
expressions which do not follow the model of descriptive names]
share, and upon which I want to focus in the present chapter.

The characteristic is this: in order to understand an utterance
containing a referring expression used in this way, the hearer must
link up the utterance with some information in his possession. Thus,
if a speaker utters the sentence ‘This man is F’, making a
demonstrative reference to a man in the environment he shares with
the hearer, the hearer can understand the remark only if he
perceives the man concerned, and, bringing his perceptual
information to bear upon his interpretation of the remark, judges:
‘This man is F: that’s what the speaker is saying’. (Evans 1982 p. 305)

(B) … consider the following case. S and A were in the habit of going
hunting together in their youth. On one of their hunting trips, they
saw a dazzling beautiful bird perched in a pine tree. Years later, S
(the speaker) may advert to this incident, and say something like: ‘Do
you remember that bird we saw years ago? I wonder whether it was
shot.’ A (the audience) may not remember this episode. In order to
jog his memory, S may say ‘Surely you remember; a hunting trip
years ago; we saw, on a pine tree, a magnificent bird’… I do not think
he can be said to have understood the remark, as it was intended to
be understood, until he remembers the bird – until the right
information is retrieved. (Evans 1982 p. 308).

(C)... in order to have a demonstrative thought (one that rests upon
perceptual information), the subject must be able to make the object
out in what he perceives; and there is necessarily a gap between
grasping 'The blonde who looks thus and so is F ' and 'That blonde is
F', because there is always room for an intelligible realization: ‘Ah! So
that’s the blonde you mean! (Evans 1982 pp. 308-309).
(A), (B), and (C) all describe subjects understanding information-invoking terms. In each case, Evans says that the audience needs to use some information at her disposal so as to understand the use of the information-invoking term. Here’s an interpretative question that we can ask: did he think that this use of information on the audience’s part was sufficient for attention to the object that the information was from?

First, as I noted above in the introduction, (C) clearly indicates that Evans thought that perceptual attention was required to understand perceptual demonstratives. That’s because his reference to “making an object out” seems to be drawing on our intuitions about the way that visual attention alters the structure of the visual part of the our total conscious states.\(^80\)

Secondly, I think Evans’s belief that information-invoking terms are Russellian strongly suggests that he thought that the audiences were attending to the referents of the information-invoking terms in all his cases. As I observed above, on Evans’s view, Russellian thoughts are supposed to be “intimate”, “direct”, or “en rapport” ways of being related to an object. But consider James’s characterization of the phenomenology of inattentive engagement with an object:

\(^80\)This commitment about perceptual attention becomes even more clear towards the end of Chapter 6 of The Varieties of Reference: “The fundamental basis, then, of a demonstrative Idea of a perceptible thing is a capacity to attend selectively to a single thing over a period of time: that is, a capacity to keep track of a single thing over a period of time—an ability, having perceived an object, to identify later perceptions involving the same object over a period of continuous observation.” (Evans 1982 p. 175). This fact brings to light an important detail about what kind of thought Evans thinks of discriminating knowledge: although he sometimes casually says that perceiving an object is one way to have discriminating knowledge of the object, what he must really mean is that consciously perceptually attending is one way to have discriminating knowledge of the object.
Everyone knows what attention is. It is the taking possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought. Focalization, concentration, of consciousness, are of its essence. It implies withdrawal from some things in order to deal effectively with others, and is a condition which has a real opposite in the confused, dazed, scatterbrained state which in French is called distraction, and Zerstreutheit in German. (James 1890 pp. 403-404, emphasis mine)

A mode of engagement with an object which is confused, dazed, and scatterbrained seems to be the opposite of whatever an “intimate”, “direct”, or “en raport” mode of engagement with an object would be.\footnote{It seems to me that the inattentive mode of engagement with an object is a way of thinking that fails to be Russellian for a different reason than thoughts based purely on descriptions. While the inattentive mode of engagement with objects \textit{does} seem to puts us in touch with an object in a non-descriptive way, the way in which it puts us in touch with an object is surely not “intimate”, “direct”, or “en raport”. It is well-known, for example, that the inattentive mode of conscious perception can fail to put us in a position single out an object. Here is a very rough illustration of the phenomenon: if you focus your visual attention on the cross below, you’ll be visually conscious of all of the “|” marks to the right of the cross but unable to single any one of them out (see Block 2013 for discussion of this phenomenon and more accurate stimuli): + ||||. Fully clarifying the sense in which the other modes of inattentive consciousness fail to enable us to single out an object in thought is a worthwhile project, but is too substantial a project for me to engage in here.} This is a reason to think that the flash of recollection in (B) must be a thought that involves intellectual attention to an object, and not just any cognitive mode of engagement with an object.

A potential reason to be skeptical of this interpretation of Evans would be a professed skepticism about the ideas that there is a real phenomenal difference between having an attentive and inattentive cognitive experience of an object. But I’ve explained what that difference amounts to in the third chapter of this dissertation. In that chapter, I argued that, in general, the field of consciousness seemed to be structured by attention. On my view, our experiences of objects of which are are inattentively conscious seem to be more peripheral in the field of consciousness – and this goes for both perceptual experiences and cognitive experiences. As I argued, Michael Martin and Ian Phillips are
wrong to say that all of our cognitive experiences seem equally central in the field of consciousness. I used Hugh Garavan’s work on simultaneously forming and maintaining two mental counts to lend weight to the idea that some of our cognitive experiences, at least sometimes, are more central than some of our other cognitive experiences. My work in that chapter puts us in a position to really understand what it would mean to assert that understanding a memory-demonstrative or a name causes us to have a total conscious state during which our experiences of the referents of those terms are at the centres of our fields of consciousness.

Thirdly, I think some of Evans’s claims elsewhere in The Varieties of Reference reveal that he must have thought that understanding the information-invoking terms in (A), (B), and (C) must require either perpetual or intellectual attention. I’ll discuss these commitments in the next part of the chapter.

1.2 Evans on the speaker’s intended referent and salience

This is what Evans has to say about the concept of a speaker's intended referent. It emerges in a discussion of how an audience is to know that a speaker meant to use a term in an information-invoking way:

For example, a speaker may have misidentified a man he can see (a) as the man he met on a previous occasion (b); in this case, his thoughts and intentions (e.g. 'I mean him’) are complex, and concern a and b equally... There seem to be some remarks that the subject might make in this situation of which a is clearly the intended referent, and other remarks of which b is equally clearly the intended referent.

For example, if the speaker uttered the words ‘That man over there is F’ the intended referent would surely be a, whereas if he uttered the sentence 'That man we met yesterday is F’ the intended referent
would surely be \(b\). The difference between the cases lies in the way in which the audience is expected to identify the referent. In the first case, the speaker intends a demonstrative identification, and, in thinking in accordance with the speaker's intentions, the hearer will think of \(a\), not of \(b\); whereas if he thinks in accordance with the speaker's intentions in the second case, he will be thinking of \(b\) and not \(a\).

Thus the notion of the intended referent is rather like the notion of a target. Suppose the subject, in the case we have been considering, had aimed a gun at the man he could see. Even if his general plan was to shoot \(b\)—for example, because the offence he wished to avenge occurred in the previous encounter— it is undeniable that \(a\) was his target, and that he intended to shoot \(a\). His lowest-level action plan concerned \(a\); success in it would involve the shooting of \(a\). Similarly, \(a\) is the speaker's linguistic target when he utters the sentence 'That man over there is \(F\); this time he is directing, not a gun, but his audience's attention. (Evans 1982 p. 317)

According to the account above, speakers who use information-invoking terms are forming the intention to cause their audiences deploy their attention in certain ways. This lends weight to the idea that we should interpret Evans, in his descriptions of cases of audiences that have successfully understood information-invoking terms, as tacitly drawing on intuitions about perceptual and intellectual attention rather than any mode of perception or any mode of thought.

Evans's remarks about the concept of "salience" speak to the same point. He discusses the concept of salience when he is discussing how it is that speakers using an information-invoking term manage to get their audiences to think of the right object:

A common way in which audiences are enabled to know which object is the referent of an expression in a particular context is by virtue of the speaker's exploitation of the object's salience. The salience can be brought about by the speaker himself, as when he accompanies the utterance of a demonstrative expression by a pointing gesture, or by rendering an object salient in some other way, for example, by shaking it, wobbling it, or causing a searchlight beam to fall upon it.
Alternatively, a speaker can exploit some extreme or heightened salience which an object has anyway (without his bringing it about); for instance, a speaker might say 'He's had enough', as one in a line of soldiers renders himself salient by collapsing. In either sort of case, if an object is salient, it will be so only to those who have a certain sort of information from the object (perceptual information, in the examples we have considered), and hence only to those who are in a position to think of the object in a certain information-invoking way (demonstratively, in our examples). For an audience to know, of an object, that it is the referent of an expression, when this is the communicative mechanism exploited by the speaker, it must be in virtue of the effect of the object's salience on the audience's informational system that the audience thinks of the object in understanding the remark. (Evans 1982 pp. 317-318)

Evans does not offer any particular definition of salience, and so we should understand it in a relatively literal way – i.e., that it is a property of objects, and that objects that are salient are objects that are disposed to capture our attention. So what this passage shows is that Evans thinks that a common way that speakers get audiences to think of the right object is to exploit the fact that the object is one that is disposed to easily capture the audience's attention.

If Evans thinks that understanding an information-invoking term requires deploying your attention in a certain way, this is just what we should expect! So these claims about salience also give us a reason to think that Evans thought that understanding a use of an information-invoking term requires attention. Similarly, therefore, they lend weight to the idea that we should interpret Evans, in his descriptions of cases, as tacitly drawing on intuitions about perceptual and intellectual attention rather than just any mode of perception or any mode of thought. These commitments of Evans's, combined with the

82 As Wu points out, sometimes “salience” is used in a different, phenomenological way. On this way of speaking, salience is “a label for the putative uniform phenomenology of attention” (Wu 2014 p. 127). But this is not the use of salience that Evans seems to have in mind.
considerations above, make it clear that we should believe that in cases (A), (B), and (C), he thought it was intuitive to describe the audiences as deploying their perceptual or intellectual attention in certain ways.

**2. The refined sufficient condition, dual-tasking, and linguistic understanding**

So I’ve established that according to Evans, there was some reasons to answer the question “Is intellectual attention required to understand certain uses of singular terms?” with “yes”. On my view, Evans thought that understanding perceptual demonstratives as well as references to absent objects requires having an experience of that object at the centre of your total conscious state. I agree with Evans about the phenomenological claim that what’s in common between understanding a perceptual demonstrative referring to an object and understanding a singular term referring to an absent object is that in both cases, one must have an experience of the object at the centre of one’s total conscious state.

But, as I have noted, these phenomenological methods of answering the question are not necessarily decisive. In this section of the chapter, therefore, I will explore what it would look like to give some non-phenomenological evidence in favour of a “yes” answer to my question. I’ll show how my refined sufficient condition can help us find behavioral evidence in favour of giving such an answer, but also point out that some further behavioral evidence would need to be gathered to fully settle the issue.\(^{83}\)

Recall that according to the refined sufficient conditions for attention, a subject’s use of information from a representation of some object to guide the performance of some

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\(^{83}\) As Wu has noted, if one endorses the *unrefined* sufficient condition for perceptual attention, then it is easy to argue that perceptual attention is required to understand perceptual demonstratives, because understanding a use of a perceptual demonstrative requires using information from a perceptual representation to guide the performance of a task (Wu 2014 p. pp. 217-218). And although he does not say so, it is just as easy to show that according to the unrefined sufficient condition for *intellectual* attention, intellectual attention is required to understand uses of other kinds of singular terms.
primary task is sufficient for attention to that object. A primary task, recall, is defined in terms of the task-relevant set of cognitive resources for a subject and for that task. The task-relevant set of cognitive resources for a task is a subset of the subject’s total cognitive resources: the cognitive resources such that they could be gainfully allocated to the subject’s performance of that task. A task is primary for a subject if she devotes all or most of the cognitive resources from the task-relevant set to the performance of the task.

This way of thinking about attention leads straightforwardly to a general methodology for figuring out whether attention is required to perform a particular task. The methodology is this: find out what happens when a subject tries to simultaneously perform two tokens of the same task type. In some cases, the subject will be able to perform both tokens well; in some cases, the subject will be able to perform both tokens in a degraded way; and in some cases, it will turn out that the subject just cannot manage to perform the two tokens at once. In these cases, the subject will end up trying to engage in both token tasks, but end up only engaging in one of them, or perhaps switch back and forth between performing one of the tokens and then the other one.

The range of tasks that lead to that final state of affairs is the range of tasks whose performance requires attention. That’s because for these tasks, if a subject allocates a small portion of the cognitive resources in the task-relevant set, the performance of the task just doesn’t get off the ground. For these tasks, a subject just can’t make the task a secondary task for herself. Not all tasks are like that, as I’ve observed before in this dissertation. To

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84 Of course, subjects will, in some cases, be unable to dual task not because of a failure of attention but because a combination of the nature of the task and other constraints. We cannot, e.g. simultaneously perform two different dances.
return to a familiar example, it seems as though subjects can devote a small amount of the
task-relevant set of cognitive resources to driving, and then end up performing the task of
driving in a slapdash way. But for any kind of task, it’s an empirical question whether it
works like driving, or whether it’s the kind of task whose performance just can’t get off the
ground unless a significant portion of the cognitive resources in the task-relevant set are
allocated to the performance of the task.

What this means is that one first step towards addressing the question of whether
attention, as characterized by the restricted sufficient conditions, is ever required to
comprehend some speech, is addressing the question of what happens when a subject tries
to follow two conversations at once.\footnote{This line of thought will, of course, only establish that attention, as characterized by the refined sufficient conditions, is sometimes required to comprehend speech. The line of thought will fail to speak to the episodes of speech comprehension that occur outside the context of trying to follow a conversation.} If following a conversation turns out to be the kind of
task that just can’t be performed twice simultaneously by the same subject, the logic
described in the preceding few paragraphs tells us that following a conversation is the sort
of task that just can’t be performed in a slapdash manner, and, accordingly, that uses of
information to guide the performance of the task of following a conversation should always
be sufficient for attention, both intellectual and perceptual. Paired with the assumption that
shifts in conscious attention alter the structure of one’s field of consciousness, this line of
thought would give us some behavioral reasons to endorse Evans’s description of the
phenomenology of understanding singular terms (but see the final section of the third
chapter for a reason to be cautious about this assumption).

It is not uncommon for psychologists to claim that we can only follow one
conversation at once – consider, e.g., this claim from the start of a paper about speech comprehension: “According to the well-known 'cocktail-party' phenomenon (Cherry 1953) one can attend to only one voice in a crowd at any one moment...” (Wood and Cowan 1995 p. 2005). If these psychologists are right, that would be a reason to think that following a conversation is the kind of task that we must make a primary task for ourselves, if we are to make it a task for ourselves at all. However, I think that it is actually hasty to conclude that the work of Cherry (1953) on “shadowing” actually gives us a reason to think that we can only follow one conversation at a time.

In the shadowing paradigm, subjects wear headphones, and the left and right sides of the headphones emit different series of recorded utterances (Cherry 1953). In Cherry’s work, the stimuli were recordings of a man reading prose at a rate of 130 words per minute. In Cherry’s experiments, the subject is instructed to repeat, as she is listening, just one of the series of recorded utterances – this is the task of shadowing. An early result from this paradigm is that subjects are incredibly poor at reporting facts about the series of utterances that they were not trying to repeat word for word, even if the utterances in the unattended stream contained just a few repeated words, and even if something notable happened, e.g. if the language of the utterances changed without warning (Moray 1959). If the subject’s name shows up in the stream of utterances that they are not shadowing, then about a third of subjects will notice, and those subjects that notice their name tend become a bit slower at shadowing the stream of utterances that they are meant to be shadowing (Wood and Cowan 1995 p. 259).

But do all these facts go to show, as Cowan and Wood think, that we can only really
follow one conversation at once? According to a more skeptical interpretation of these results, all they really show is what happens when we are instructed to follow one conversation (or stream of audio) but are perceptually exposed to two. What would happen if a subject were instructed to attempt to follow two conversations (or streams of audio) at once, while trying to make both tasks primary for themselves, still seems to be an open question.\footnote{See, e.g., Driver (2001) for a review of some studies that make use of the shadowing paradigm. Some studies have investigated dual-channel listening tasks, but they tend to be easier than genuinely following two conversations (e.g., pressing a key whenever a certain letter or numbers is mentioned).} Of course, if such an experiment were to be performed, the methodology could not actually involve shadowing, because physical limitations preclude us shadowing two streams of audio at the same time – one method would be to test the subject for memory of both streams but not require responses while the messages played.

The shadowing paradigm, therefore, offers suggestive but not entirely conclusive evidence in favour of the thesis that, by the lights of the refined sufficient conditions, and in the context of following a conversation, attention is required to understand words like perceptual demonstratives or memory-demonstratives. Accordingly, it offers some limited reason to think that Evans’ view about the relationship between attention and linguistic understanding is on the right track.

3. Hoerl and McCormack on Evans

Evans’s claim that perceptual attention plays a role in the comprehension of perceptual demonstratives is widely recognized and discussed. But as I’ll argue, a point which is less frequently recognized is that he thinks perceptual demonstratives belong to a class of terms – what Evans called “information-invoking singular terms” – and that he
thinks that some kind of attention is required to understand every use of a member of this class of terms. For Evans, this class of terms includes what he called “memory-demonstratives” – demonstratives used to refer to objects that a speaker and and audience encountered together in the past. Here is one of Evans's descriptions of a use of a memory demonstrative, which I’ve already quoted in this chapter but present again for convenience:

... consider the following case. S and A were in the habit of going hunting together in their youth. On one of their hunting trips, they saw a dazzling beautiful bird perched in a pine tree. Years later, S (the speaker) may advert to this incident, and say something like: ‘Do you remember that bird we saw years ago? I wonder whether it was shot.’ A (the audience) may not remember this episode. In order to jog his memory, S may say ‘Surely you remember; a hunting trip years ago; we saw, on a pine tree, a magnificent bird’; and S may be able to indicate a very similar bird, perhaps in a photograph, or in the wild. A, knowing S to be trustworthy, will believe all he says, and will of course be prepared to bring his belief (which may become quite rich and detailed) to bear on S's original remark. But I do not think he can be said to have understood the remark, as it was intended to be understood, until he remembers the bird – until he right information is retrieved. (Evans 1982 p. 308).

Evans’s account of memory-demonstratives has received less attention in the literature than his account of perceptual demonstratives. In Sense and Content, Christopher Peacocke referred to memory-demonstratives as “memory-image demonstratives”, and may have attribute to Evans the view that understanding a memory-demonstrative required experiencing some sort of memorial image of the referent of the memory-demonstrative (Peacocke 1984 p. 173; McDowell 1990 p. 260, p. 264). John McDowell has criticized this interpretation of Evans in two ways: firstly, McDowell notes that in The Varieties of
Reference Evans doesn’t actually mention “memory-images”, and secondly, McDowell claims that such a view is phenomenologically implausible (McDowell 1990 p. 260; p. 265).

I agree with McDowell’s latter critical point – experiencing a particular memorial image of an absent object doesn’t seem either necessary or sufficient for understanding a reference to the object in question. But I also think that McDowell’s line of thought needs fleshing out. If it’s true that the understanding a memory-demonstrative does not require experiencing a mental image of the referent of the term, then what is it actually like to understand a memory-demonstrative? This is a question that McDowell leaves unanswered in his criticism of Peacocke.

Later in this chapter, I will argue that Evans actually thinks that understanding a memory-demonstrative seems to requires intellectually attending to the referent of the term, and thereby having a cognitive experience of it at the centre of one’s total conscious state. This view about the phenomenology of understanding a memory-demonstrative is different from Peacocke’s view in two ways. First, it differs from Peacocke’s view in allowing that we can think about the referents of memory demonstratives through having a cognitive experience that isn’t necessarily a memory-image. And this seems like a good result, because when we understand memory-demonstratives, we seem to consciously think of what they refer to, but not necessarily to experience memory-images of what they refer to.87 Second, this view about the phenomenology of understanding a memory-

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87 The phenomenology of understanding a memory-demonstrative seems similar to the phenomenology of understanding a name. Here’s how Evans describes that kind of phenomenology: “… the single main requirement for understanding a use of a proper name is that one think of the referent” (p. 400).
demonstrative differs from Peacocke’s in requiring that the experience be at a particular “location” within the field of consciousness - the centre, not the periphery.\textsuperscript{88}

But first, before arguing that Evans endorsed such a view, I will move on to consider another mistaken interpretation of Evans’s account of memory-demonstratives, according to which he does not actually think that any kind of attention is required to understand them. In their paper “Joint Reminiscing as Joint Attention to the Past”, Christoph Hoerl and Teresa McCormack first argue that “episodic recall uniquely involves the particular form of attention, which might be described as attention to particular past events” (Hoerl and McCormack pp. 263-265). Then they go on to argue that there is a sense in which people can jointly attend to past events together, just like they can jointly perceptually attend together to nearby objects in the environment (Hoerl and McCormack pp. 263-265 p. 283). They think that when we talk about past events with each other, we employ such a capacity.\textsuperscript{89}

\textsuperscript{88} See Chapter Two of this dissertation for more on centrality in the field of consciousness. Also, see the introduction of Chapter Three for a list of experiences that are cognitive and yet (in most cases) plausibly best characterized as non-imagistic.

\textsuperscript{89} My primary interest in this chapter is the proper interpretation of Evans's account of understanding a talk about past events, but it's worth briefly pointing out that my sufficient condition for intellectual attention can deal with a problem for Hoerl and McCormack's project in their paper. Their way of thinking about attention is mostly stipulated, rather than driven by the practice of theorists studying attention, which makes their conclusions of interest to a relatively limited audience (i.e., those that are willing to accept the stipulation). What they say about attention is it is the use of information to “actively” answer a question about our current or past environment (Hoerl and McCormack p. 266).

I think that my sufficient condition for intellectual attention can help with this problem, because the range of cases that it identifies as attention fully overlaps with the range of cases that Hoerl and McCormack's way of thinking about attention picks out as cases of attention. One kind of use of an information from a representation to guide the performance of a primary task is the use of information from a representation that you engage in when you’re “actively” trying to answer a question about your past or present environment. But of course, there are many other kinds of uses of information to guide the performance of a primary task, and Hoerl and McCormack would be unduly hasty to rule out calling those cases of attention. Therefore, I think that if we think of my sufficient condition for intellectual attention as the basis for their conclusions, rather than their own account of attention, Hoerl and McCormack's conclusions would be of interest to a wider audience.
While they pursue their first goal, they compare the way that they think that thought and talk about past events functions to the way that Evans thinks that thought and talk about past events functions. On Hoerl and McCormack's view, Evans doesn't think that intellectual attention is required for episodic recall, and moreover, they argue, this alleged feature of his view is a problem for him. This is how they characterize Evans's view:

Consider the following example, adapted from Alfred Ayer (1956) and Gareth Evans (1982; see also Campbell, 2001). Suppose that a friend tries to remind you of an incident in your past of which she was a witness. As Ayer points out, you need not be in any doubt that the incident occurred; in fact, you might even form an accurate mental image of it. Even so, it is possible that you cannot get yourself to remember the incident. Suppose also, however, that after a while, the incident does come back to you. This may happen quite suddenly, ‘in a flash of recollection, as Evans (1982 p. 308 puts it). The question now is: How should we describe what happened to you—i.e. what this change in your state amounts to?

Evans thinks that the change at issue can be described as a change in the causal history of your state. As he puts it, the relevant state of recollection only sets in once ‘the right information is retrieved’ (ibid)—i.e. information that traces back to your own experience of the incident. ... [but as] the literature on priming brings out, there are a number of ways in which particular past experiences can have a causal influence on a person’s subsequent mental state in the absence of conscious recollection (c.f. e.g. Mayes, 2001, for examples). Thus, it is not clear why we should rule out the possibility that your friend’s attempts to jog your memory succeeded in activating information retained from your experience of the incident, even before the flash of recollection occurred. Indeed, such information might play a part in explaining your ability to form an accurate mental image say, of the location and people involved. (Hoerl and McCormack p. 264).

On Hoerl and McCormack’s way of interpreting Evans, whether an audience trying to understand a memory demonstrative has retrieved the right information depends entirely on the causal connection between the audience’s current informational state and the past event. Hoerl and McCormack seem right to say that such an account of understanding
memory-demonstratives seems inadequate. As they mention, even when a causal link is present, and information from the past event is having an effect on the subject’s present state, the audience might not have the characteristic experience of understanding the memory-demonstrative.

They go on to argue that making the right use of the information is sufficient for attention, and that such a way of attending is required to understand the reference to the past event (Hoerl and McCormack pp. 263-265 p. 283). And although they don’t say so explicitly, the attention at issue must be intellectual rather than perceptual, since thinking about the past requires using information from cognitive representations rather than perceptual ones.\(^90\)

Hoerl and McCormack seem to have misunderstood what Evans means by “retrieved the right information”, and have failed to notice the fact that Evans also thinks that intellectual attention is required to understand memory-demonstratives. As I argued above, Evans thought that attention was required to understand any kind use of an “information-invoking” singular term (a category that includes a wide range of words other than perceptual demonstrates – e.g. proper names and anaphors). Unlike recent theorists, Evans was not concerned with explaining why it was that attention played such a role in understanding information-invoking singular terms (e.g. Smithies 2011 and Dickie 2011). He also wasn’t interested in offering extensive arguments that attention played such a role in understanding information-invoking singular terms. The only argument he offered was

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\(^{90}\) A further question to ask and address is whether the cognitive representations we employ in understanding memory-demonstratives merely enable understanding, or themselves contribute to the epistemic standing of our states of linguistic understanding (see, e.g. Burge 1993 p. 481 for a discussion of whether perception enables or justifies the knowledge we acquire through testimony). I don’t take up the issue here, but am inclined to argue that, in general, our uses of information from both cognitive and perceptual representations contribute to the epistemic standing of our states of understanding.
that reflection on cases seemed to show that attention is required to understand information-invoking singular terms.

As we’ve seen, Evans thought that the observation that attention played such a role in understanding “information-invoking” singular terms was an important first step in an argument for a thesis about the philosophy of language. The thesis in question was his claim that the thoughts we grasped while understanding information-invoking terms are thoughts about objects by the lights of “Russell’s Principle”. Russell's Principle is the thesis that “a subject cannot make a judgment about something unless he knows which object his judgment is about” (Evans 1982 p. 89).

Such a view is more phenomenologically plausible than the view that Peacocke attributes to Evans, according to which understanding a memory-demonstrative requires experiencing a particular kind of memory-image. Moreover, such a view is also more plausible than the view that Hoerl and McCormack attribute to Evans, according to which an audience’s “retrieving the right information” doesn’t necessarily have any phenomenal upshots for the audience. As I've shown, such a view is supported by my refined sufficient condition for intellectual attention, which is motivated by a close analysis of the practice of science, as well as some behavioral evidence about what happens when audiences try to follow conversations. Attributing this view to Evans, therefore, seems like the most charitable option.

7. Conclusion

As I noted above, distinguishing between perceptual and intellectual attention puts us in a position to ask a variety of interesting questions about intellectual attention and
linguistic understanding. I’ve made some headway on addressing one of the simpler
questions that such a distinction enables us to ask: is intellectual attention ever required to
understand references to absent objects?

I argued that, contra some other interpreters, Evans is at least one philosopher that
would give a “yes” answer to that question. I argued that the best way to interpret his
remarks about the phenomenology of understanding memory-demonstratives was in
terms of the effects of conscious intellectual attention. On my view, Evans thinks that when
we understand a memory-demonstrative we have a cognitive experience of that object at
the centres of our total conscious states. Secondly, I used the sufficient conditions for
intellectual attention from the first two chapters of this dissertation to give us some non-
phenomenological reasons to answer my question. I argued that according to the broad
version of the sufficient condition, it is easy to give a “yes” answer, since on that way of
thinking any use of information from a cognitive representation to guide the performance
of a task is sufficient for attention. I also described what sorts of behavioral evidence would
allow us to give a “yes” answer using the refined version of the sufficient condition that I
developed in the second chapter of this dissertation.

Lastly, I think my argument in the final section of this chapter shows that a virtue of
the refined sufficient conditions for perceptual and intellectual attention is that they lead to
straightforwardly to such a method of using behavioral evidence to come to a conclusion
about whether perceptual or intellectual attention is required to perform some task. The
methodology of getting a subject to attempt to perform to tokens of the same task type and
analyzing the result is one that is applicable in a variety of other contexts.
Conclusion

With this dissertation, I’ve addressed the lack of a systematic study of intellectual attention and the role it plays in our mental lives.

In the first chapter, I argued that thinking of intellectual attention in terms of selection for action, or uses of information from cognitive representations to guide the performances of tasks, has better prospects than any extant account of intellectual attention.

In the second chapter, I distinguished between two different ways of thinking of intellectual attention in terms of using of information from cognitive representations to guide the performances of tasks. Then I argued that only the uses of information from cognitive representations to guide the performances of primary tasks - rather than secondary tasks - seem sufficient for intellectual attention.

In the third and fourth chapters, I addressed some preliminary questions about whether intellectual attention alters conscious cognition and when intellectual attention plays a role in the comprehension of speech. I argued that attention can alter the structure of conscious cognition, and that in some contexts intellectual attention is required to understand certain singular terms. In so doing, I have demonstrated that the way of thinking about intellectual attention that I’ve developed is a fruitful one, and I think that adopting it puts us in a position to ask and answer many more questions about the role that intellectual attention plays in our mental lives.
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