What is Conscious Attention?

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Everyone knows what attention is. It is the taking possession of 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.

William James, *Principles of Psychology*

1. Introduction

Perceptual attention is essential to both thought and agency, for there is arguably no demonstrative thought or bodily action without it.¹ Psychologists and philosophers since William James have taken attention to be a ubiquitous and distinctive form of consciousness, one that leaves a characteristic mark on perceptual experience. As a process of selecting specific perceptual inputs, attention influences the way things perceptually appear. It may then seem that it is a specific feature of perceptual representation that constitutes what it is like to consciously attend to an object. In fact conscious attention is more complicated. In what follows, I argue that the phenomenology of conscious attention to what is perceived involves not just a way of perceptually locking on to a specific object. It necessarily involves a way of cognitively locking on to it as well.

To begin, let us introduce the term *phenomenal salience* to refer to the way an object or property figures to a subject when she attends to it, a way that constitutes what it is like to attend to that object or property.² Keeping in mind that it is possible to attend to multiple items (I shall not refer to this feature explicitly), this constitution claim implies:

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¹ See Campbell (2002) on the former; Wu, forthcoming on the latter
² Note that in psychology what is salient is what captures attention. “Salience” is not used to describe a perceptual state. Thanks to Hemdat Lerman and David Hilbert for emphasizing this.
(P) Necessarily, a subject \( S \) consciously attends to an object \( o \) or property \( F \) iff \( o \) or \( F \) is phenomenally salient to \( S \).\(^1\)

We can give modality specific versions of \( P \) such as for conscious perceptual or conscious visual attention where we focus on perceptual or visual phenomenal salience respectively. Our question *what is conscious attention?* becomes the question *what is phenomenal salience?* This essay proposes an answer.

Since we are focusing on an aspect of consciousness, we might think that the phenomenon should be clear on introspection. James evidently thought that the nature of attention was obvious on introspection. Reflection suggests two vivid forms. The main focus of this essay is on what we can call the Jamesian form captured by the epigraph. James noted that attending to an object yields simultaneous contrast: we focus on one object while withdrawing from others. Although he speaks here of thought, he writes in similar terms of attention in perception: “Accentuation and Emphasis are present in every perception.”\(^4\) Contemporary psychologists have echoed James’ description in their talk of attention as a spotlight or zoom lens. While these are metaphors for sub-personal information processing, they strike us as apt because they echo James’ characterization of the phenomenology of attention. Philosophers give similar characterizations. John Campbell presents the scenario of identifying the person to which one’s companion is pointing in a “sea of faces”, and he notes that until we “experientially highlight” the relevant face, that is until we consciously attend to it, we do not know who is being referred to.\(^5\) Consider also a scenario posed by David Chalmers: “one might look at two

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\(^1\) I will not explicitly mention attention to properties or to multiple items in what follows, but both will always be implicit. One can also attend to regions of space, and while I do not discuss this facet of attention explicitly, my proposal should also apply to the phenomenal salience of regions of space.

\(^4\) William James (1890), p. 284.

\(^5\) Campbell, op. cit., pp. 7-8.
Chalmers points out that the attended light may be “represented as more salient than the other light” although he adds that it is not clear what salience amounts to.\textsuperscript{7}

The upshot of these Jamesian descriptions is that conscious perceptual attention is typically characterized by simultaneous relative contrast between attended versus unattended objects: the attended object is experienced as highlighted, accentuated, spotlighted, emphasized or more salient in contrast to unattended objects concurrently perceived. I shall refer to this form as \textit{synchronic phenomenal salience}, one that is most clearly associated with voluntarily maintaining attention on an object. It is this notion that has figured in recent debates about representational accounts of perceptual experience and the possibility of demonstrative thought, debates we shall consider below.

The second form is most strikingly associated with what is called \textit{attentional capture} although it is also associated with voluntary shifts of attention. Consider the cases of attentional capture where stimuli intrude on experience: a sudden increase in the volume of background music, the movement of a stationary object at the periphery of vision, or the sharp sensation of a cramp in one’s leg while swimming. Something grabs our attention. The issue here is a contrast in the presentation of a single object over time, what I will call \textit{diachronic phenomenal salience}. That object becomes \textit{salient}.

We cannot, however, understand conscious attention without drawing a variety of distinctions that delineate the varieties of attention. I begin in section 2 presenting distinctions necessary to adequately identify the \textit{explananda}, the two forms just noted. I then turn in the next two sections to giving a representational account of phenomenal salience. My aim is to present a reductive account in the sense of explaining phenomenal

\textsuperscript{7} Chalmers, ibid.
salience in terms of representational properties but without invoking irreducibly phenomenal notions. I consider both pure and impure representational accounts, namely, accounts that appeal only to representational content and those that appeal also to the psychological mode (respectively). In section 3, I argue against pure reductive accounts of phenomenal salience but ultimately defend an impure account.

In section 3, I make explicit a point typically implicit in discussions of (reductive) representationalism, namely that representationalism requires not just the supervenience of the phenomenal on the representational but also that the phenomenal must be intelligible in light of that representational basis. I then consider pure reductive accounts of synchronic salience and argue that they fail to meet this intelligibility requirement. Minimally, the requirement implies a certain correlation between the phenomenal and representational that the proposals I consider fail to provide: where the phenomenal feature obtains, so must its representational basis. I show this first for an empirically motivated account of visual synchronic salience in terms of visual contrast although the point can be plausibly generalized to any visually represented property and indeed to other sensory modalities as well. I then consider whether diachronic phenomenal salience is the more fundamental notion since a pure representational account of it appears available and it seems to correlate in the required way with synchronic salience. Yet this correlation is illusory. I conclude that the prospects for a pure reductive account of synchronic salience are very dim.

In section 4, I argue for an impure account of both forms of phenomenal salience, one that appeals to psychological mode and representational content. Surprisingly,

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8 The distinction between pure and impure representationalism is made by Chalmers, op. cit. The term “psychological mode” is John Searle’s (1983). Chalmers speaks of a “manner of representation”.

9 Some non-reductivists about phenomenal character could consistently endorse my account. They would just hold that consciousness also involves other irreducible phenomenal properties.
phenomenal salience associated with conscious perception derives in part from cognition. The rough idea is this: the phenomenal salience of an attended object correlates with one’s perceptual-based demonstrative thought about it, typically a demonstrative awareness that one is attending to that object. To put it another way, an attended object is phenomenally salient to me because attention to it anchors my demonstrative thoughts about it. This proposal promises a unified account of synchronic and diachronic salience although within limits. The account provides a blueprint for reductive representationalism about phenomenal salience, not a full vindication of it. The reason is that to the extent that perceptual-based demonstrative thoughts make a difference to conscious experience, this derives in part from the phenomenal character of the perceptual basis. Nevertheless, if the account I present is correct, the phenomenon of conscious attention adds no further challenge for reductive representationalism than the extant challenges raised by the non-attentional phenomenal character of perception.\footnote{Speaks (forthcoming) argues that attention does not contravene representationalism about perceptual phenomenal character although it does pose additional challenges to attempts to reduce all phenomenal character in terms of representational content. This paper disagrees on the latter point. Chalmers, op. cit., suggests that attention might provide the strongest counterexample to reductive representationalism.}

Finally in section 5, I consider one consequence of the account in respect of the role of consciousness in demonstrative reference. In an important discussion, John Campbell has argued that conscious attention is necessary for demonstrative thought. I argue that while conscious perception may be necessary for demonstrative thought, phenomenal salience is not. Rather, demonstrative thought explains phenomenal salience and not the other way round. Indeed, both are effects of a common cause: the subject’s activity of perceptually selecting a specific object.

2. Varieties of Attention
Attention is a highly complex phenomenon, and to adequately identify our explanatory target, we need five distinctions: (1) the attentional process versus product, i.e. the process of attending and the corresponding state of attention; (2) overt versus covert attention; (3) maintaining versus shifting attention; (4) voluntary versus involuntary attention; and (5) diachronic versus synchronic salience. (2)-(4) are best seen as applying to the process of attending while (5) characterizes the state of attention.

(1) “Attention” can refer both to a process of attending or to its product, the resulting perceptual state. With respect to the process, we understand attention as the selecting of particular perceptual inputs for the control of cognition or action. Specifically, we either refer to the operation of a selective mechanism in a given perceptual or cognitive system (philosophers will speak here of the subpersonal) or to the subject’s attending and thereby selecting specific inputs (the personal), in both cases in order to prioritize perceptual input for further processing. With respect to the product, the central idea is that the process of attending yields a specific state, a conscious state characterized by phenomenal salience. It will be important to remember that the process notion does not involve a phenomenal characterization while the state notion can. In what follows, I will provide an account of the state of conscious attention and its specific phenomenology using the nonphenomenal notion of information selection, i.e. the process of attending. To avoid ambiguity, I will speak of attentional selection to identify the process notion.

(2) Overt versus Covert Attention: This contrast is deployed in empirical psychology but is intuitive enough. A subject’s attention to an object is overt if the subject’s attentional state results from movement that brings the relevant sense organ in a more optimal orientation towards the object attended. Talk of overt attention is best taken to be a description of the process. In the case of vision, overt attention involves movement of the
eye or head where this typically ensures that the targeted object stimulates the fovea, the region of the retina that yields greatest visual acuity. Attention is covert if it can shift independently of any movement. Cases of covert visual attention are typically illustrated by having the subject maintain eyes fixed on a given point. The subject can still shift attention across the visual field.

The Cocktail Party Effect illustrates both the capture of attention as well as covert attention in the auditory domain. At a party, you are involved in conversation with the surrounding noise indistinct when suddenly you hear your name mentioned in a group behind you. Their conversation captures your attention while that of your group recedes as you lock on to the new conversation, a shift that can quickly reverse itself. This effect does not require that one overtly attend; thankfully, covert mechanisms suffice. We can shift attention between different sounds without moving our bodies. Similar effects can be found in bodily awareness and touch. Indeed, it seems possible to shift attention covertly across sensory modalities, e.g. to attend first to what is seen and then to a sound.\(^1\) This is crossmodal attention.

(3) Maintaining versus Shifting Attention: A subject can either shift or maintain attention on an object. The spotlight metaphor is naturally invoked here: we can move the spotlight to different objects or we can keep it focused on an object.

(4) Voluntary versus Involuntary Attention: This distinction concerning the process of attention is given various glosses in psychology: top-down versus bottom-up; goal-directed versus stimulus-driven; voluntary versus involuntary; endogenous versus exogenous. Unfortunately, these pairs are not equivalent nor do any of them cut finely enough for my purposes, for what is needed is a three-fold distinction. Consider the

\(^{11}\) Thanks to Casey O’Callaghan for emphasizing the crossmodal case.
 voluntary/involuntary distinction, perhaps the most intuitive. While the notion of involuntary attention is appropriate for attentional capture, there are two forms of goal-oriented attention, one of which is intuitively voluntary, the other not.

As James emphasized, perceptually attending to an object is often an action whether this involves the subject’s shifting attention to an object or maintaining attention to it. Consider shifts of attention. Attention in this case is either a mental or bodily action depending on whether it is covert or overt. Such shifts are goal-oriented. Many goal-oriented shifts are voluntary shifts, namely those that occur because the subject intends to shift attention in that way. There are, however, goal-oriented shifts of attention that I will refer to as non-voluntary to indicate that they are not intentional actions. The clearest case of this is saccadic movement of the eye during action (saccades), i.e., quick ballistic movements of the eye that happen between one to four times per second. One can, using an eye tracker, follow the path of an agent’s saccades over time, and the resulting pattern is intelligibly dependent on the agent’s goals. Thus in a crowded room, an agent’s saccades may be directed towards feet if his goal is to examine footwear while if the goal is to examine jewelry, the saccades will be directed to necks and ears.\textsuperscript{12} It is also thought that covert attention precedes each saccade in order to program the movement of the eye;\textsuperscript{13} if so, then most overt and covert forms of visual attention are goal-directed though not voluntary. Moreover, we are not aware of them. We are surprised to learn about the frequency of our saccades. Covert attention as deployed to program saccades does not involve any distinctive phenomenology that we would speak of as attentional although in shifting attention the character of experience can be affected in disparate ways, especially

\textsuperscript{12} The classic demonstration of this is by Alfred Yarbus. For a recent discussion, see Land (2006). Yarbus’ eye tracing results are diagramed on p. 303.
\textsuperscript{13} Hoffman (1998).
when we move our eyes. Much goal-oriented attention during natural viewing, namely, non-voluntary attention, does not exhibit phenomenal salience. Thus the relevant forms of attention that elicit phenomenal salience are voluntary attention and stimulus driven involuntary attention. More simply, phenomenal salience tracks both our acts of attention and the capture of our attention.

(5) Diachronic versus Synchronic salience: There are two temporal dimensions relevant to characterizing the state of conscious attention. On the one hand, an object that we attend to may differ from how it appeared prior to attending to it. In this case, the difference in the appearance of an attended object is characterized relative to its appearance in the past, and we have diachronic salience. The intuitive idea is that we perceptually register an attended object’s “accentuated” appearance relative to its prior appearance. It becomes salient. On the other hand, an attended object may differ in respect of other objects in the perceptual field at the time of attention. The attended object is accentuated or highlighted in contrast to co-perceived unattended objects. Here we have synchronic salience.

We can now say more clearly what the two forms of attention I noted in the introduction come to by highlighting the processes that typically are associated with them. The phenomenon that James describes is a perceptual attentional state characterized by synchronic salience and typically arising from a voluntary process of maintaining attention to an object; the state initially resulting from involuntary or voluntary shifts of attention is a perceptual attentional state characterized by diachronic salience. Both processes can be either covert or overt although to simplify I shall focus on covert processes.

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Such perceptual scanning can lead to phenomenal salience, but this will be because some object that we encounter while scanning captures our attention. This would be a case of attentional capture that I shall explain after giving an account of the voluntary case.
The Jamesian account emphasizes synchronic phenomenal salience as the distinctive phenomenal character of a state of conscious attention and it seems to be what most philosophers have in mind when discussing conscious attention. I shall argue over the next two sections that synchronic salience must be explained by appeal to extra-perceptual factors, specifically certain forms of demonstrative cognitive representations of the object attended to. In other words, the phenomenal salience typically associated with perception has a cognitive basis. The Jamesian description, however, suggests that salience concerns how the attended object perceptually appears, so an initial question is whether we can account for synchronic salience in terms of perceptual content, specifically the perceptual representation of some synchronic relational property. The answer, as we shall see, is no.

3. Pure Representationalism and the Challenge of Synchronic Phenomenal Salience

Along with many philosophers, I am inclined to reductive accounts of phenomenal character that appeal to representational properties without invoking irreducible phenomenal notions.\(^{15}\) Still, non-reductivists can endorse my account of phenomenal salience while maintaining that there are other irreducible phenomenal features. Indeed, in this section they have an ally. I will first consider whether a pure reductive representationalist account of synchronic phenomenal salience is defensible, namely one that appeals only to perceptual content. By considering the most plausible options and generalizing from these, I argue that no representational perceptual contents can do the work required by pure reductive representationalism.

All forms of representationalism endorse supervenience:

\(^{15}\) Such accounts are more a theoretical starting point for me rather than indicative of a commitment to full-scale reduction of the phenomenal. The main point of the paper is that phenomenal salience, at least, can be given a reductive account.
(S): Necessarily, for any experiences E1 and E2, if there is a phenomenal difference between E1 and E2, then there is a representational difference between them.

As with P above, S can come in various versions restricted to specific psychological kinds or modalities. In its various forms, S has been the primary target of anti-representationalist arguments. Here is the familiar dialectic. Anti-representationalists attempt to refute S by identifying experiences where there are phenomenal changes with no representational changes. The representationalist responds by uncovering an unnoticed representational change. It is critical to note, however, that not any representational change will do. The representational property must in addition be “appropriate related” to the phenomenal property. What the appropriate relation comes to is an open question although reductive representationalists will require some explanatory relation: the relevant representational change must bear some intelligible relation to the phenomenal change.

To see why the intelligibility condition is required, recall Christopher Peacocke’s example of monocular and binocular vision: while keeping your eyes fixed on some point before you, look first with both eyes and then with just the right. One could argue that there is a phenomenal difference associated with the experience of depth but no difference in what is represented for it is the same scene visualized. Michael Tye responded that there are two differences at the representational level: first, the representation of depth is more determinate and second, we see a little more at the periphery of the visual field. These phenomenal and representational changes track the switch between binocular and monocular vision so they will covary in normal cases.

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16 In what follows, when I speak simply of representationalism, I always mean reductive representationalism. Peacocke (1983).
The phenomenology at issue concerns the difference in one’s experience of depth, and this feature is plausibly accounted for by differences in the determinacy of representations of spatial information of relevance to computation of depth. The second representational difference, however, seems not appropriately related at all. After all, what does representing more at the left edge of the visual field have to do with one’s experience of depth say in the center? The former could hardly make the latter intelligible. Here is the critical point: had we only been able to appeal to the second difference, I submit that the response would fail to save reductive representationalism—or at least any interesting version of it—even though it identifies a representational property that covaries with the change in phenomenology as required by $S$. It is thus possible to save supervenience, $S$, without saving representationalism. Not every representational difference that covaries with the phenomenal is of use to the representationalist. Representationalists are thereby committed to the stronger:

$S^*$: Necessarily, for any experiences $E_1$ and $E_2$, if there is a phenomenal difference between them, then there is a representational difference between them that makes the phenomenal difference intelligible (i.e. bears some explanatory relation to it).

$S^*$ implies $S$ but a defense of $S$, such as Tye’s second point, leaves open the possibility that $S^*$ is false. An adequate representationalist defense must show that $S^*$ is not falsified. This requires that the representationalist show that the proposed representational basis plausibly explains the phenomenal feature. What this explanatory condition comes to is a difficult matter, but it minimally implies the following correlation condition: necessarily, if an experience has phenomenal feature $P$ then it has the representational basis $R$ invoked to explain it.\(^\text{19}\) Where the phenomenal feature obtains, so must its representational basis. After

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\(^{19}\) Characterizations of reductive representationalism attribute to it commitment to biconditionals of the form: necessarily, an experience $E$ has phenomenal property $P$ if and only if $E$ has representational property $R$ (where $R$ is the
all, how could the representational basis render the phenomenal feature intelligible if the latter can occur without the former? In light of $S^*$, it will sufficient to refute a proposed reductive account by showing that we can have the phenomenal feature without the proposed representational basis.\textsuperscript{20}

What relevance does attention have to debates about representationalism? Recall Chalmers' example of shifting attention between two red lights, one he suggests might pose the strongest counterexample to reductive representationalism. He notes the possibility that there is a phenomenal change as attention shifts, namely a change in synchronic phenomenal salience, without any change in the representation of the scene. This would falsify $S$. In the remainder of this section, I take up two tasks: (a) to indicate that there are a variety of attentional affects on conscious experience that can be explained at the level of perceptual content; (b) to show that there is no perceptual content that correlates with synchronic phenomenal salience as required by $S^*$. Given (b), a pure reductive representationalist account of synchronic phenomenal salience is unavailable.

Chalmers' two lights example concerns synchronic salience as the result of covert attention.\textsuperscript{21} To experience the effect for yourself (do not rely on imagination), draw two

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\textsuperscript{20} Discussion of representationalism has largely focused on $S$. This is understandable given that showing that $S$ is false suffices to refute representationalism about the phenomenal feature in question. But we should not let this focus obscure the fact that the representationalist must meet a higher standard in providing accounts of the phenomenal, namely that captured in $S^*$'s intelligibility requirement. As I am giving a representational account, I shall present proposals with the aim of satisfying that requirement and argue, in this section, that the pure accounts fail to meet it. Of course, one can also refute the proposals I shall consider by constructing counterexamples directly to $S$.

\textsuperscript{21} I will focus on covert attention. Indeed, part of the problem is that overt visual attention has often been identified with conscious attention. Given that overt attention involves foveation (i.e. allowing a specific object to stimulate the fovea), one conflates the striking effects of foveation for phenomenal salience. The surface of the human retina can be divided into a foveal and parafoveal region. Among the relevant physiological differences is the distribution of photoreceptor cells, specifically rods and cones. The fovea, a region about 1mm in diameter, contains a high density of cones that enable greater visual acuity and are necessary for chromatic color perception. The parafoveal region has few cones and thus yields little to no chromatic color perception. The differences in visual acuity between the two regions are apparent on introspection. Thus, in
black dots on a piece of white paper with sufficient spatial separation along a line, the midpoint of which one can draw a cross as the point of fixation. Holding the paper at a comfortable distance while maintaining fixation on the cross, shift attention from one dot to the other (one can also do something similar with natural scenes).

We should note two points. First, the task is difficult and the effects are subtle. Second, in visually perceiving natural scenes, unless we are spying, we do not keep our eyes fixed; rather, we constantly move them. One may then doubt that there is any phenomenal upshot of covert attention but remember the Cocktail Party Effect where there is a striking phenomenal change that accompanies covert attention. There are also covert crossmodal cases noted above that have a striking vividness to them such as focusing on the soothing sound of the sea to lessen one’s physical pain. Thus, there is *prima facie* support for the Jamesian characterization in terms of synchronic phenomenal salience. Taking this point on board, our question is this: can synchronic salience be a matter of how the object appears as a pure representationalist will maintain?

Returning to Chalmers’ lights case, a representationalist will need to find some representational difference in how the lights are presented that is intelligibly related to synchronic phenomenal salience. In fact, the representationalist can appeal to empirical work that shows that in respect of contrast, covertly attending to an object makes it appear of greater contrast than it is prior to attending to it. Covert attention does alter appearances.²² Marisa Carrasco and coworkers found that in the perception of contrast

²² Carrasco (2004). We can ignore genuine empirical questions whether the experiments demonstrate what they purport to.
patches (Gabor patches), attention seems to boost apparent contrast from 3 to 6%. One can experience this effect by examining fig. 1. The Gabor patches, when covertly attended to, appear to be of higher contrast than when unattended. This gives representationalists an empirical basis to claim that there is a representational difference of the right sort when attention is covertly deployed.

Carrasco’s finding suggests a representationalist notion of salience upon which phenomenal salience supervenes. Focusing on contrast as the relevant parameter:

**(CON)** Necessarily, for any object x and y in S’s visual field, x is more salient* than y to S if and only if x is of higher perceived contrast than y to S (i.e. x is represented as having higher contrast than y).

We do not have a true necessary condition here as an object could be salient* along other visual parameters (see below). Still I believe my argument applies to any of these and their combination, so I’ll simplify and speak of contrast as giving a necessary and sufficient condition. Thus, an object is visually synchronically phenomenally salient relative to other objects currently in view if and only if it is more salient* than those objects.

Unfortunately, this representationalist account fails: salience* is neither necessary nor sufficient for phenomenal salience. First, we can attend to the object of least salience* and thereby render it phenomenally salient (e.g. a lower contrast Gabor patch versus many visibly higher contrast ones). Greater perceived contrast is not necessary for phenomenal salience. Nor is it sufficient, for we need not attend to those higher contrast objects that we simultaneously perceive; they are not themselves thereby phenomenally salient. As per James, we can withdraw from and ignore them.

One might object that I am simply assuming that phenomenal salience arises when attending to the object of lowest contrast and need not arise with respect to an object that
has the highest contrast in the visual field. I agree that what happens in each case is an empirical matter, but there are general grounds for taking my predictions to be true at least in some cases and that is all that is required. Recall P noted in the introduction: necessarily, S consciously attends to o iff o is phenomenally salient to S. For those who endorse the Jamesian metaphors, the relevant notion is synchronic phenomenal salience. Now if we drop across the board the possibility of synchronic phenomenal salience as invoked in my proposed counterexamples, it follows that it is impossible to consciously attend to lower contrast Gabor patches in the face of much higher contrast Gabor patches concurrently perceived and also that there must be conscious attention to the higher contrast Gabor patches as only these can be phenomenally salient.

Such restrictions are hard to maintain, for it means that a given contrastive difference of a specific magnitude renders conscious attention to a specific object either impossible or necessary depending on the distribution of levels of contrast. There do not, however, seem to be such general restrictions on conscious attention. Consider perception of natural scenes. Our visual world is filled with objects that differ in contrast, brightness, saturation, etc. Our capacity for conscious attention to an object, and thereby rendering it as phenomenally salient, is not in principle limited by the relative magnitude of these parameters although attention can be correspondingly more or less difficult in specific cases. Thus, in respect of a scene of a sufficiently low contrast Gabor patch among much higher contrast ones, it is possible to consciously attend to and thereby render phenomenally salient the former and withdraw from the latter. So, the counterexamples stand.

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23 Thanks to Hemdat Lerman for pressing me to say more here.
Contrast provides a plausible, empirically grounded proposal that fails to satisfy the correlation condition implied by $S^*$, but we can generalize the point. Given any visual parameter that can plausibly be used to define salience* including parameters that have continuous magnitudes such as brightness or (color) saturation, it seems that we can always consciously attend to the object in the visual field that is lowest in magnitude along that parameter. Similarly, we can ignore an object of greater magnitude. For example, if the process of attentional selection was shown to boost apparent brightness of the attended object and thus literally act as a spotlight (this is speculation), it would still be possible to render that object synchronically salient even if it is not the brightest object in the visual field despite the boost from attention (e.g., attend to a dark spot on a white wall). It is clear from experience that we can attend to the least brightest object in view rendering it rather than the other objects salient to us; moreover, we can ignore the brighter objects. Similar points would apply to the possibility of boosting apparent saturation or, as far as I can see, to other visual properties that can plausibly fill in for contrast in CON. Accordingly, phenomenal salience will not track salience* given an account of the latter in terms of visual magnitudes like contrast, brightness, saturation etc. It seems that no single or indeed disjunction of visible properties used to define salience* necessarily correlates with synchronic salience as required by $S^*$. Indeed, the argument is plausibly extended to other sensory modalities: for each modality and transposition of CON in terms of a suitable property represented in that modality (e.g., intensity of sound in audition), it seems possible to find counterexamples of the same form where salience* does not correlate with synchronic phenomenal salience. Thus, salience* does not explain synchronic salience.

It is worth noting a further difficulty facing any account of synchronic phenomenal salience, namely crossmodal conscious attention. We can not only render an object
synchronously salient in contrast to other objects concurrently perceived within a specific perceptual modality, but we can also render an object synchronically salient relative to other objects perceived in different modalities. Thus, I can attend to an object pressing on my palm and render it synchronically salient as against other objects concurrently present to me in vision, audition and so on. A represented feature specific to one modality, like visual contrast, cannot provide an account of synchronic phenomenal salience of sufficient generality so as to explain synchronic salience in other modalities or across multiple modalities. We need a representational feature that can meet this generality condition.24

There remains one representational property that might plausibly correlate with synchronic salience, namely diachronic phenomenal salience. Moreover there is a prima facie plausible pure representational account of diachronic salience. What diachronic attention suggests is a salient difference in the appearance of an object over time. In the typical case, the relevant times are right before a shift in attention (t1) and right after attention has shifted to an object, x (t2). Let us now characterize a related notion of salience, salience^, that highlights this temporal dimension. It will be helpful first to characterize possible changes in salience^ for the visual case:

(CHN+) Necessarily, for any object x perceived by S at times t1 and t2: for S, x at t2 is more salient^ than x at t1 if and only if for S, x at t2 is of greater perceived contrast than x at t1 (again, simplifying to focus only on contrast).

(CHN-) Necessarily, for any object x perceived by S at times t1 and t2: for S, x at t2 is less salient^ than x at t1 if and only if for S, x at t2 is of lesser perceived contrast than x at t1.

(CHN=) Necessarily, for any object x perceived by S at times t1 and t2: for S, x at t2 is equally salient^ as x at t1 if and only if for S, x at t2 is of the same perceived contrast than x at t1.

24 One might think that a disjunctive account of synchronic salience invoking some preferred represented feature for each modality (contrast for vision, pitch for audition, etc.) might yield the required generality, theoretical inelegance aside. But note that this proposal will inherit for each modality the same type of problems we noted for CON in the visual case.
We can add for the sake of argument that this temporal contrast in appearance is represented in one’s current experience. We can then say that x is diachronically salient if and only if x is more salient for the time periods at issue (i.e. we are dealing just with CHN). Given Carrasco’s experiment, this is a plausible representationalist account of diachronic salience. Since it also seems plausible that diachronic and synchronic salience have a common cause, namely the shift of the attentional mechanism between two objects, we may expect at least nomological correlation between the two.

In the next section, I point out that the diachronic salience of an object implies its synchronic salience, but in this section I show that the reverse implication does not hold and hence that the required correlation fails. Still both are forms of phenomenal salience, and it will be helpful to consider the current proposal carefully so as to map out their interrelations. The initial problem with the proposal is that given that \( S^* \) presents the relevant condition, salience as used to explicate diachronic salience is not appropriately related to synchronic salience. Salience is understood in terms of the representation of a difference in the same object at different times whereas synchronic salience is understood as the representation of a difference between different objects at the same time. Thus, even if the current appeal to diachronic salience saves \( S, S^* \) is threatened.

What we need if the proposal has any chance is a difference between the attended object and all other objects perceived at a time. Can we secure intelligibility by considering the salience of all objects perceived at a time? For example, in Chalmers’ two lights case, perhaps synchronic salience arises because the attended light is diachronically salient (more salient) while the other light is not. After all, if Carrasco’s results are correct, the light will decrease in salience as one shifts attention away from it. Let us also add to Chalmers’ example a third light on which attention is never directed
during the time periods in question and which is of equal salience\(^\wedge\) over time. Why then is the object we attend to synchronically salient? On the current proposal, it is the only one that is diachronically salient (i.e. increasing in salience\(^\wedge\)) with the others maintaining or decreasing in salience\(^\wedge\). Synchronic salience derives from relative differences in salience\(^\wedge\), roughly whether the objects in question are diachronically salient or not.

To meet the generality condition noted above, let us recall the case of crossmodal attention. In crossmodal shifts of attention, we can covertly shift attention between objects as perceived in each modality, say from the sensation of pressure on our back as we sit to the dancer performing before us. Since visual contrast will not help us capture synchronic salience in this case as different perceptible properties will be at issue in each modality, we can focus on changes in value in respect of salience\(^\wedge\). Thus, we need only consider whether there is an increase or not along salience\(^\wedge\) however we define it. This leads to a fairly simple picture. Of the three lights, the one to which we shift attention is synchronically salient in respect of the others perceived at that time because it is diachronically salient while the others are not: it is the only one that increases in salience\(^\wedge\). This seems to me the most promising pure reductionist account.

The problem remains that we are using a notion that refers to changes across times to explicate a notion that applies specifically at a time. When we maintain attention to one of the lights without making further shifts of attention, the light attended to remains synchronically salient even if nothing about it changes over the relevant period of time. Yet in the absence of any changes in salience\(^\wedge\), the notion of diachronic salience doesn’t get a grip as that notion is tied to the perceptible changes in an object over time. Indeed, in maintaining attention to one of the lights, the other lights also need not change in respect of salience\(^\wedge\). So where attention doesn’t shift over time but is maintained on an object,
there is no change in diachronic salience of any object, yet the attended light is
synchronically salient. Moreover even in cases of perceptible changes over time, it is clear
that a subject can maintain attention on an object and render it synchronically salient even
as it decreases in magnitude along any perceptible parameter and thus decreases in
salience^ (think of focusing on the light as it fades to nothing). In both examples, we
have a counterexample to the proposed correlation between synchronic and diachronic
salience, namely synchronic salience without diachronic salience.

I conclude that there is no adequate pure reductive account of synchronic
salience. For such accounts, S* is genuinely threatened. If a representationalist wants to

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25 In the second case, we might hold that if the light on which we have been maintaining attention decreases in
salience^, then it is in that way diachronically salient. Thus, we can say that an object is diachronically salient
iff it increases or decreases in salience^ . This won’t work as we can see in Chalmers’s two lights case. In shifting
attention away from one of the lights, its salience^ decreases (if Carrasco’s results are correct) but it is not
diachronically salient.

26 It is sometimes said that attention to an object renders it figure as opposed to ground, a reference to
figure/ground segregation in early vision, a necessary step in the constructing of visual representations of
objects. If we treat Chalmers’ lights as actual objects, figure/ground organization must have already been
completed. If the appeal to the distinction is to do any work in characterizing salience, it must refer to some
property that can be visibly presented. Stephen Palmer recounts the phenomenological characterizations of
Edgar Rubin who first discussed figure/ground segregation. Rubin noted that phenomenologically, the figure
appears to be a thing while the background does not (See Palmer (1999) p. 281ff). This will not aid the
representationalist since our case involves the presentation of multiple things only one of which is salient. The
critical feature evoked by talk of figure-ground is spatial. Thus, Rubin noted that the figure appears in front of
the ground or appears closer to the observer. But again, these factors will not underwrite phenomenal salience:
unattended objects can appear in front of the attended object, can appear closer etc. The appeal to figure
versus ground does not help.

27 There are differences worth noting in the auditory domain. In the case of linguistic stimuli, i.e. hearing
spoken words, the Cocktail Party Effect reveals a representational difference. When Cherry (1953) pioneered
the investigation of attention by having subjects listen to two distinct streams of sounds (dichotic listening), one
in each ear, he showed that if we attended to one auditory channel, we could understand the words spoken
therein but at the cost of losing track of what was said in the other channel. This yields a distinct
representational property in the case of hearing speech, for when we attend to one auditory channel, we
understand what is said while we fail to understand what is said in the other unattended channel.
The case of listening to speech suggests that we can perceptually lock on to higher-order properties of a
specific stimulus. Unfortunately, in cases of meaningless (non-linguistic) sounds, no such property seems to be
in the offing, and in respect of synchronic salience, the basic argument I deployed in the visual case is equally
effective: we can render phenomenally salient through auditory attention an auditory object despite the
presence of other auditory objects that are greater in magnitude along some auditory dimension (higher in
pitch, greater magnitude in loudness, etc.). Consider, after all, attending to the woodwinds in a complex
symphony. We thus have auditory cases where attention renders objects synchronically salient yet where no
correlate at the level of properties represented can be found (consider also tactile perception, say the
experience of pressures at different parts of the body and attending to one of these).
pursue a reductive account of phenomenal salience, the only option is an impure account.\textsuperscript{28} In the next section I argue for such an account.

4. An Impure Reductive Representational Account of Phenomenal Salience

The core idea of this section is that phenomenal salience is to be explained not just by the selectivity of perceptual attention but also by what we can call the selectivity of demonstrative cognition. This is part of an impure reductive account that appeals to a cognitive way of representing the attended object as the relevant representational property. What is surprising is that phenomenal salience also has its roots in cognition contrary to our intuition that it is a purely perceptual phenomenon. My account begins with recognizing that attending to an object is often a form of agency and that in such cases, the subject is typically aware that she is attending to that object. This awareness is (broadly) a cognitive way of selecting a specific object and provides the relevant representational property to give an impure reductive account of phenomenal salience. The power of the proposal is that it gives a unified account of synchronic and diachronic salience.

James’ own characterization in the epigraph emphasizes that attention is often an action involving active selection: one takes possession of an object in a way that can require concentration and effort while withdrawing from others so as to deal effectively with it. Consequently, the impure representationalist can argue that an object is synchronically phenomenally salient because the subject actively targets it rather than other concurrently perceived objects. It is voluntarily selected so as to make it available for thought and further action. Voluntary attentional selection is an intentional action. We can

\textsuperscript{28} As an anonymous referee has emphasized to me, S* has a different import for the pure and impure representationalist. In part, the impure representationalist has more leeway in what is available to meet S*. I make use of this advantage in what follows. Thanks also to John Campbell for suggesting more exploration needed here.
then think of the process of attention functionally in terms of intentionally selecting specific objects for further thought and action.

The impure account attempts to correlate synchronic salience with a specific manner of representing a content, and the initial proposal speaks of a perceptual attentional manner of representation. Yet James’ point suggests that attention is not itself a perceptual manner of representation but a response to what is perceptually represented. In speaking of the process notion of attention, we are not speaking of selection as itself representing but as the subject’s identifying aspects of what is already perceptually represented to inform cognition or action. That is, we are speaking in the voluntary case of an intentional action of selecting not representing (if the latter can be thought of as an action at all). Thus, an impure reductive account must identify something in addition to attentional selection if it is to identify a relevant manner of representation.

There will be worries in any event if we appeal only to attentional selection characterized in functional terms since it has always been controversial whether a functionalist reduction of a phenomenal property is viable. We can make the worry concrete given the distinction noted in section 2 between two goal-oriented forms of attention. What I noted was that some goal-oriented forms lack any phenomenal feature that is intuitively attentional, namely the frequent non-voluntary covert forms that spatially program saccadic movement of the eye. We have in normal experience what we might call a “zombie” selection mechanism: selection without phenomenal salience. This shows that attentional selection as such is not sufficient for synchronic salience. Rather, it must be some specific form of selection. In particular, it is only with voluntary attention that synchronic salience arises in goal-oriented cases. Thus if we aim for a reductive impure representational account, we must explain the distinction between voluntary and non-
voluntary goal-directed attentional selection. Specifically we must identify the nature of an action’s being voluntary such that we see why that property or some specific variant of it necessarily covaries with and is intelligibly related to synchronic salience. It seems plausible, however, that the account of an action’s being voluntary moves the basis of synchronic salience to extra-perceptual factors. Voluntariness after all is a property of mental and bodily actions. I will now develop this claim. The central idea is that the relevant manner of presentation is demonstrative cognitive representation, a manner that is made available by voluntary attentional selection of that object.

Our starting point must be to understand what difference attention’s being voluntary makes. While it will not be possible here to explain what it is for an action to be voluntary, it does seem that a necessary feature of voluntary action is that one can be aware of what one is voluntarily doing. In the case of voluntary attention, it seems that we are typically aware of what we are doing. Indeed it is hard to find cases where voluntary attention and awareness of it come apart. In general, when we voluntarily or intentionally attend to x, whether in directing attention to x or simply maintaining attention on it, we do so with an awareness that we are so doing.

We can leave it open exactly what this form of action awareness is, but treat it as a cognitive state in that it represents the world in such a way as to be assessable for veridicality (it has, in Searle’s terminology, a mind-to-world direction of fit).\(^\text{29}\) It is a state such that being in it makes a difference to what it is like for the subject at that time, for it accounts for the awareness that typically accompanies voluntary attention. The initial idea

\(^{29}\) There is an assumption here that may be controversial, namely that the form of action awareness is non-perceptual. To speak of action awareness as perceptual is not to claim that we use perception to figure out what we are doing but rather to claim that the specific form of awareness or introspection is in some ways analogous to perception. I do not think that a perceptual model of introspection is viable, less one of introspection of mental actions like covert attention, but I cannot argue for this here. It is an assumption I am making, but one that is shared by many others (cf. Sydney Shoemaker’s influential work, e.g. his 1996).
then is that an attended object is synchronically salient in contrast to concurrently perceived objects precisely because in voluntarily acting on that object (attentionally selecting it) one is cognitively aware of it as the target of one’s so acting.

To elaborate the proposed account, we should recall two types of voluntary attention: shifting versus maintaining attention. Take shifting attention first so as to set it aside momentarily. The relevant contrast with the voluntary case of visually shifting attention is the frequent non-voluntary saccades we make as well as the covert attentional shifts that program them. When we first enter the kitchen to make a sandwich, our eyes rapidly scan in a pattern that is intelligibly related to that goal, flitting within seconds between the utensil drawer, refrigerator, counter, bread, etc. We are in this case unaware of the sequence of movements and objects targeted. Phenomenal salience doesn’t arise.\textsuperscript{30} Contrast this to the case where we voluntarily shift attention in the same order to these objects because we intend to shift in that sequence. Whereas in the former, it is not the case that there is phenomenal salience that tracks the shift in attentional selection, it is present in the latter case but initially as \textit{diachronic} salience. That is, each object to which we voluntarily shift attention becomes salient.

Let us then move to voluntarily maintaining attention, for it is here that synchronic salience is most clearly seen.\textsuperscript{31} I shall speak here of this process of attentionally selecting an object as one way of anchoring one’s subjectivity to it, specifically tying one’s cognitive awareness to a specific object. This dependence of awareness on attentional selection indicates that the awareness is demonstrative. In voluntarily maintaining attention to an object, we are typically aware of what we are doing with respect to that object. Such

\textsuperscript{30} Of course, there are changes in perceptual content consequent on shifting attention, but as argued in the last section, none of these changes in perceptual content constitute synchronic salience.

\textsuperscript{31} I am grateful to an anonymous referee for emphasizing this.
demonstrative awareness is anchored to that object precisely because we have voluntarily selected it and only it among the objects currently perceived. The synchronic salience of the object to the subject is constituted by this demonstrative representation of that and only that object at a time. What is salient is then what one voluntarily maintains attention to and thereby demonstratively represents in being aware of one’s so attending.

The anchoring of one’s awareness of that to which one is voluntarily maintaining attention is the basic limiting case, but as voluntary forms of attention are also goal-directed, other intentional states directed at the attended object are often present. Voluntary goal-directed attention is the selection of an object for the sake of further thought and action on it. In response to voluntarily attending to a specific object, the subject actively thinks about it as opposed to other objects perceived, makes plans or deliberates about it as opposed to others, is aware of moving towards and acting on it rather than others and so on. We can say that the attended object also anchors such broadly cognitive activity. One is in general then aware of what one is variously doing, activities that are united by a common anchor: the attended object. To the extent that these states make a subjective difference to the subject, they do so because the selected object rather than others is at the center of explanations of that subjective difference. That is, the subject is demonstratively cognitively representing that object and not others concurrently perceived. Thus, the proposed account can plausibly meet the explanatory demand imposed by $S^*$. As I noted, the selectivity found in synchronic phenomenal salience is intelligibly related to what we can call the selectivity of demonstrative thought, namely that one is thinking in a specific way about that object. Just as demonstrative thought is a type of targeting of a specific perceived object, that specific object anchors such thought.

Readers of John Campbell’s work on reference and consciousness will note that I am reversing Campbell’s proposed order of explanation. See section 5 for a discussion.
This notion of anchoring demonstrative thought is the basis of synchronic and (as we shall see) diachronic salience.

Phenomenal salience is constituted by anchored demonstrative awareness, what I shall call the subject’s (perceptually anchored cognitive) activities. These activities involve one’s awareness of attending to a specific object but also to associated thoughts about that object given one’s attending to it. The salient object is just what occupies our thought in light of the process of attending to it. Thus:

(PS) Necessarily, for any subject $S$, object $o$ perceived by $S$ and $S$’s (broadly) cognitive activities $A$: $o$ is phenomenally salient to $S$ iff $S$ attends to $o$ (selects $o$) such that $o$ anchors $S$’s activities $A$ ($A$ involves demonstrative representations of $o$).

Note that “attends” on the right hand side refers to the process of selection.33 The characteristic experiential character of conscious attention, the salience of an object to the subject, is explained in terms of anchored mental states and activities in which the subject partakes, states which demonstratively represent just the object attended to. Thus the relevant manner of representation is not attentional selection but rather demonstratively anchored cognitive representation of the object that depends on such selection. Since demonstrative thought is in its way selective of specific objects, this manner of representation is intelligibly related to phenomenal salience.

The distinction between synchronic and diachronic salience is specified using the framework given by PS. Let us begin with synchronic salience:

(SPS): Necessarily, for any objects $o$, $p$, $q$... consciously perceived by $S$ in modality $M$ at $t$ and $S$’s activities $A$ at $t$:

$o$ is synchronically salient to $S$ at $t$ relative to $p$, $q$... in modality $M$ iff at $t$, $S$ attends to $o$ rather than $p$, $q$... in $M$ such that only $o$ anchors $S$’s activities $A$ ($A$ involves demonstrative representations of $o$).

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33 This responds to a circularity worry posed to me, in different venues, by XX and YY.
We can also formulate a similar crossmodal condition although I shall not do so here.

Where we have the phenomenon that James described, the salience of the object implies that it and not other objects currently perceived anchors demonstrative cognitive representations. We can thus explain why non-voluntary goal directed attention fails to give rise to synchronic salience: it does not anchor appropriate demonstrative representations of \( o \). The question is whether anchoring is sufficient for synchronic salience, a question I will consider below, but first let us extend the account to diachronic salience.

In the last section, I noted a *prima facie* plausible pure reductive representational account of diachronic salience in terms of salience\(^\wedge\). We must, however, reject this account. The reason is that the diachronic salience of an object implies its synchronic salience. That is, when I come to render an object diachronically salient by shifting attention to it, that object is now also synchronically salient relative to other perceived objects (although as argued above, the reverse implication does not hold). Yet the characterization of diachronic salience in terms of salience\(^\wedge\) does not entail SPS. Rather, we need a uniform account that subsumes both forms of salience. PS also gives us the right framework for diachronic salience whether from voluntary shifts of attention or from attentional capture. It thus satisfies the generality condition noted in section 3.

Consider voluntary shifts of attention and the following notion of diachronic salience:

**DPS**: Necessarily, for any object \( o \) consciously perceived by \( S \) in modality \( M \) from \( t1 \) to \( t2 \) and \( S \)'s activities \( A \):

\[ o \text{ is diachronically salient to } S \text{ at } t2 \text{ relative to } t1 \text{ iff at } t1, S \text{ was not attending to } o, \text{ but } S \text{ 's attentional selection shifts to } o \text{ at } t2 \text{ such that } S \text{ 's activities } A \text{ come to be anchored to } o \text{ at } t2, \text{ i.e. } A \text{ involves demonstrative representations of } o. \]
Intuitively, the diachronic salience of an object to which we shift attention is that of its coming to occupy our thoughts by anchoring them whereas prior to attending to it, it did not anchor those thoughts. The shift in what our demonstrative thoughts target is what intelligibly tracks diachronic salience in voluntary shifts of attention, namely changes in the objects that are phenomenally salient over time. Notice also that given DPS and SPS, diachronic salience implies synchronic salience: if o is diachronically salient, then S’s activities come to be anchored to o (rather than to other objects) and this is sufficient for the synchronic salience of o.

A similar account can be given for attentional capture, namely involuntary shifts of attention. We need, however, to emphasize the possibility that the object that captures attention may not have been perceived prior to its being attended (for example, an object may suddenly appear in the perceptual field). This yields:

(DPSC): Necessarily, for any object o consciously perceived by S in modality M at t2 though perhaps not at t1 and S’s activities A:

o is diachronically salient to S at t2 relative to t1 iff at t1, S either did not perceive o or perceived o without attending to it but S’s attention (attentional process) is captured by o at t2 such that S’s activities A come to be anchored to o at t2, i.e., A involves demonstrative representations of o.

Properly speaking, diachronic salience implies the disjunction of the two right-hand conditions in DPS and DPSC although I shall not here give the final biconditional. The point is that PS, with its invocation of anchoring and demonstrative representation, provides a uniform framework to explain both diachronic and synchronic salience in its voluntary and involuntary manifestations.

We were interested in phenomenal salience as associated with conscious perception and now we are told that salience has its roots partly in demonstrative cognitive awareness of that to which we are attending. The account may seem overly cognitive. But
why are we so sure that the original phenomenon was purely perceptual in the sense of ruling out a cognitive component? Despite the ease with which we can get someone to acknowledge the existence of phenomenal salience, I disagree with James that it is obvious and with those who think it is relatively clear what conscious attention is. The results of the last section suggested that while we may concur on cases where phenomenal salience arises, there do not seem to be (pure) representational contents that covary with phenomenal salience. The case changes when we consider impure accounts, but what does seem to track phenomenal salience is an awareness that one is attending to the object in question or otherwise demonstratively thinking about it, or so I have argued. Indeed, recall the example of shifting attention between two black dots offered to elicit your intuitions about synchronic salience. It is worth noting that given the task instructions, namely to explicitly attend to one object, then the other and to reflect on the experience of so doing, one is exemplifying the cognitive awareness I have emphasized. Synchronous salience is apparent to us in this example precisely because the nature of the task encourages the required form of cognition.34

Yet if extra-perceptual features are central to accounting for phenomenal salience, why are philosophers so confident in attributing synchronic salience as solely a property of perception? Even if philosophers tend not to question this attribution, many cognitive scientists I have informally polled do. We do not have sufficient uniformity in characterizations of synchronic salience among theorists to warrant much confidence in our intuitions. The dispute will not be settled by dueling introspective reports. While James

34 This paragraph is prompted by comments from an anonymous referee. The referee raises an additional query: isn’t it intuitive that animals that are not capable of the sort of action awareness or demonstrative thought invoked above nevertheless experience phenomenal salience? Again, I am wary of our intuitions here since they are only as strong as the accuracy of our grasp of the phenomena, and I do not think we have a good pretheoretical grasp of the nature of conscious attention. I do agree that all animals capable of action must be capable of attention in the process sense (for an argument for this, see my XX, op. cit), but it is not obvious to me that they would have phenomenal salience.
was right about many things, the obviousness of the nature of attention is not one of them. The account I have provided explains the lack of uniformity as reflecting uncertainty as to whether the feature is tied to perception or cognition precisely because both are involved and intertwined. After all, given that my account of synchronic salience highlights the role of demonstrative thought and given the dependence of such thought on voluntary perceptual attention, we can explain why reflection on conscious attention may give different answers, depending on how one weights these contributions. On the one hand, we may emphasize the perceptual aspect, one’s perceptually selecting an object; on the other, we may emphasize the cognitive, demonstrative core that secures our talk of focusing on that specific object. Given the tight connection between the two in conscious attention, the noted lack of uniformity among theorists is intelligible, even expected.

Let us take stock of impure representationalism by returning to the question whether anchored representations are sufficient for phenomenal salience. What we have learned is that an impure reductive account cannot stop at attentional selection of an object for this is not a manner of representation but rather a voluntary or involuntary activity in response to what is perceptually represented, an activity that itself leads to the relevant manner of representation, namely cognitive demonstrative representation of what is attended to. This yields a plausible impure account of phenomenal salience that says more than $P$ in a way that elucidates the phenomenon.

Rather than invoke the demonstrative manner of representation in cognitive states, might not the demonstrative be part of perceptual content, drawing on a view that has been advocated by John McDowell (1994) and Bill Brewer (1999). This proposal agrees that the relevant manner is demonstrative, but locates it in perception not cognition. I cannot take this option. I agree with Gareth Evans (1982), as Richard Heck (2000) has interpreted him, and with John Campbell (2001), that to explain demonstrative thought by emphasizing its relation to perception, we cannot then appeal to demonstratives at the level of perception. Thus, I endorse an explanatory aspiration that precludes invoking demonstratives in perceptual content (see next section). As I understand McDowell’s view, the appeal to demonstratives was in part to respond to Evans’ challenge of the fineness of grain in perceptual representation, the problem that what is perceptually represented may be finer than the concepts that we possess, say when we perceive distinct shades of color or determinate shape contours. Yet an account that appeals to demonstratives at the level of perceptual content cannot use them to
On my account, the demonstrative representation carries the bulk of the explanatory role, for it provides the intelligible link between an impure representational property, namely the way certain objects are represented, and the phenomenal salience of what is perceived. Still, perceptual consciousness remains essential to phenomenal salience, for the demonstratives at issue are demonstratives that are grounded in ongoing perception, demonstratives that are available precisely because what is demonstrated is consciously perceived. Anchored demonstrative representations make a difference to what it is like for the subject in part due to this dependence on conscious perception. The phenomenology of demonstrative thought will reflect the phenomenology of perception on which it is based. Where the relevant anchored demonstrative representations of an object are conscious in this way, then a particular object consciously perceived is rendered salient to the subject. Thus, PS does identify a sufficient condition given the type of demonstrative thought at issue.

At the same time, we see that an impure reductivist account is not fully vindicated by PS as it stands since the notion of demonstrative thought that is deployed implies some perceptual phenomenal character, namely that characterizing the perceptual state on which demonstrative thought is anchored. So the analysans as stated implicitly appeals to explain phenomenal salience. The reason is that the fineness of grain say of color or shape is present in both what is attended and what is not attended. That is, fineness of grain characterizes the totality of what is perceived and this can be wider than what is attended. Thus, one can look at a flower of various shades of red, where demonstratives are deployed to explain the fineness of grain in perceived color. Yet one can render phenomenally salient just one of the shades of red. Perhaps we are willing to give up demonstratives as an answer to the question of fineness of grain (say, we think perception has nonconceptual content), and use them specifically to explain phenomenal salience: what is attended to is demonstratively represented in perceptual content and an object is then phenomenally salient iff it is perceptually demonstratively represented. It is not clear that this will work, given the phenomenon of nonvoluntary attention that does not yield phenomenal salience. Moreover, this proposal gives up on the explanatory project Evans, Campbell and others pursue, a project that seems to me substantive and worth taking up. To pursue it, however, makes demonstratives unavailable at the level of perceptual content. Thus, the view is unavailable to me. Nevertheless, this proposal shares an essential point: the demonstrative manner of representation as a way to explain phenomenal salience. Note that in cognitive science, there is talk of demonstrative-like elements in visual representation, but this is attributed to early vision and is preattentive, i.e. prior to the deployment of attentional mechanisms (see Pylyshyn, 2001).
some perceptual phenomenal character. This appeal, however, is not an appeal to phenomenal salience, so the account is not circular even as it falls short of being reductive. The picture that is emerging is that at the level of conscious perception, there are what we can call “first-order” phenomenal features, precisely those features that representationalists and nonrepresentationalists have been debating. Perceptually-based demonstratives in cognition depend on a link to conscious perception as exemplifying these features. Phenomenal salience arises when conscious perception anchors demonstrative thought on the basis of attentional selection of the right sort. It is just a higher-ordered feature built up from perception and thought, but it does not add any further challenge to the reductive representationalist beyond the challenge of explaining in reductive terms the first-order phenomenal features of perceptual states. Still a reductionist account of phenomenal salience will be fully vindicated only to the extent that the phenomenal character associated with a given perceptual experience of \( o \) necessary for demonstrative thought about \( o \) can be given a reductive characterization. This returns us to the ongoing debates about representationalism and perceptual consciousness that cannot be settled here. It will be enough to have the framework for explaining conscious attention as given by \( PS \), a framework available to reductive (and nonreductive) representationalists.

Demonstrative thought is an important part of the explanation of phenomenal salience. Yet on some accounts of demonstrative thought, this puts the cart before the horse, for they claim that phenomenal salience explains the possibility of demonstrative thought. In the last section I shall briefly discuss the proposed order of dependence.

5. Conscious Attention and the Possibility of Demonstrative Thought
John Campbell has argued that perceptual attention to an object is necessary for demonstrative thought about it or at least the initial demonstrative targeting of such thought (we can disengage attention after the initial selection as when I continue to think about *that* object after it disappears from view). On this point I agree, but Campbell emphasizes that the form of attention here must be *conscious* perceptual attention to the object. This is vividly brought out in his example of a “sea of faces”:

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.

To know which object is *that woman*, to be able to understand the demonstrative, one must visually single out that woman, i.e. attend to it. But Campbell goes on to add that one must “experientially highlight” that person in the sea of faces and this suggests synchronic phenomenal salience.

To say that we can think demonstratively about an object only if we at some point consciously attend to it is to say that the object must be phenomenally salient. Indeed, James’ characterization suggests that synchronic salience is the notion needed to explain demonstrative thought since this is thought that can select a specific object among a multitude of *concurrently* presented objects. In contrast, the explanation I have given of synchronic salience implicitly deploys demonstrative thought on the attended object in an account of anchoring. If that account is correct, synchronic salience cannot explain how demonstrative thought is possible. The order of explanation is reversed.

Two further possibilities might be thought available to cash out the claim that conscious perceptual attention is necessary for demonstrative thought. On the one hand, in the visual case we have noted that overt attention to an object does make a difference to

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36 For another, different, argument for this claim, see Smithies (ms).
how the object perceptually appears. On the other hand, we have noted that there is the distinct notion of diachronic phenomenal salience.

We can quickly dispose of the proposal that overt attention to an object is necessary for demonstrative thinking about it because we can think demonstratively about an object that we are covertly attending to as the Cocktail Party effect shows. Consider as well foveal vision. One way to show how an overtly attended object is highlighted relative to an unattended object is to note the difference between foveal and parafoveal vision. But visually based demonstrative thought about an object does not require that we foveate that object. So overt attention to an object does not identify a necessary condition on demonstrative thought. The other possibility is that the diachronic salience of an object is necessary for demonstrative thought about it. But again it does not seem that diachronic salience is necessary for demonstrative thought, for one can maintain attention to an object and think demonstratively about it even as it becomes less prominent over time, say as it slowly fades to nothing, or when it does not change at all.

Campbell is right that attention at some point to a particular is necessary for demonstrative thought about it. As noted above, we can speak of the required form of attention here as in a way synchronic: to think demonstratively about an object requires that our thought be anchored by information regarding just that object, and this requires that information from a specific object as opposed to other objects in the perceptual field be selected. As is clear from the last section, I am also inclined to agree that demonstrative thought depends on conscious perception; that is, the selection at issue concerns information that is presented consciously. Still, in granting all of this, it does not follow that conscious attention, i.e. phenomenal salience, is needed for demonstrative thought.
Phenomenal salience seems explanatorily idle. Let us return to Campbell’s sea of faces case. You comment on a woman you point out in a crowd, but I cannot identify her, the crowd appearing as a sea of faces. As I want to understand who it is you speak of, I intend to visually attend to the woman you point to. Now, I agree with Campbell that in this case, until I have attentionally selected the woman, I cannot demonstratively think about her. Thus, I cannot form an intention with a demonstrative content, namely to visually attend to that woman. My way of identifying the target of attention must be descriptive: I intend to visually attend to the woman you refer to. Nevertheless, I can ultimately succeed in targeting the specific person, and this is how an underlying mechanism might go. Perhaps you describe her further to me to help me identify the relevant person and this description informs my intention. After forming the descriptive intention, my attentional system shifts to the object that satisfies the description (via top-down effects on information processing). This is a form of goal-directed attention that leads to informational selection where the visual system (i.e. the “subpersonal”), driven by some “description” of the target, identifies it and prioritizes information from it to anchor thought and action. Once the woman is perceptually selected, it seems that under normal conditions I now intend to attend to that woman, specifically to maintain attention on her. I have come to think demonstratively about her.

Yet all that seems to be required to move from the descriptive to the demonstrative intention is consciously given inputs and a goal-directed mechanism of selection (the process notion of attention) that allows certain information to control thought. It is not clear what is missing in this story that synchronic phenomenal salience would provide. In fact, on my account phenomenal salience and demonstrative thought are effects of a common cause: attentional selection. After all, phenomenal salience is constituted in part
by demonstrative thought. When I am in a position to have the demonstrative intention, the object is then synchronically salient to me. Phenomenal salience, and thus conscious attention, does not play a causal role in grounding demonstrative thought. Rather, conscious attention is constituted by anchored mental states. This involves demonstrative thought and does not explain it.

Strikingly, James’ original characterization of attention in thought also explains the experience of attention to perceived objects, for the phenomenal salience of perceived objects, and hence our consciously attending to them, depends on those objects anchoring thought. And since this thought is demonstrative thought grounded in conscious perception, we can understand why the phenomenology has seemed so closely tied to perception as to lead us to ignore the cognitive component. But perhaps the close connections between cognition, perception, and action should not surprise us, for they are all intertwined and attention often serves as a common thread.  

Figure 1: (from Carrasco, op. cit.). While fixating on any of the four black dots, shift attention to the gabor patch on the left. It should appear to be of the same contrast as the one on the right. PERMISSION TO BE OBTAINED.

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