0. Introduction

In this paper I argue that we can account for ‘Temporal Presence’ – the experience of things as ‘happening now’ or ‘as present’ by appealing to the ‘Principle of Presentational Concurrence’. On this account, items are Temporally Present in experience if they are concurrent with the phase of experience in which they feature. This account naturally faces the objection that there are Time-Lags involved in temporal experience. Accordingly, I provide an account of temporal experience that renders these Time-Lags unproblematic. I use this same account to disable the Time-Lag argument against Naïve Realism.

Over the course of the paper I set out a number of rivalrous accounts of temporal experience: the Cinematic View; Memory Theory; Specious Present Theory; and Extensionalism. The view favoured in this paper combines Extensionalism with Naïve Realism about perceptual experience. In more detail, the view advanced here is that experiences is not homogenous either temporally or spatially. Rather, the experiences of temporal and spatial regions are taken as explanatorily primitive. It is this denial of homogeneity that solves the Time-Lag problems, and renders plausible the Principle of Presentational Concurrence as an account of Temporal Presence.

1. Streams and Experiences

Consciousness is often described as ‘streamlike’. The thought being that it ‘unfolds’ in some distinctive way over time. The stream of consciousness is also plausibly thought of as consisting of a variety of different experiences that occur at different times. In providing a philosophical account of the nature of the stream of consciousness and the experiences that compose it, we need to say something about their temporal properties.

In the debate about the temporal structure of consciousness, there is near-universal agreement that the temporal extension of the stream of consciousness itself has an explanatory role to play in giving an account of our experiential relationship to time. At the most fundamental level, it seems that the stream of consciousness changes its properties over time. For instance, I might be visually experiencing cornflakes in the morning, and chips in the evening.

The explanation of this change in the properties of the stream of consciousness is that I am experiencing cornflakes at one time, and chips at another. This explanation of the change thus appeals to 1) the temporal extension of the stream of consciousness, and 2) the idea that the stream of consciousness is composed of experiences. A notable exception here is Pelczar, who agrees with 2, but denies 1:

It could be that all of my conscious experience – a whole life’s worth – consists of a structure of simultaneously co-existing experiences standing to one another in simultaneous relations of dependence.(Pelczar, 2010, p. 60)

While Pelczar’s is an interesting dissenting voice, I shan’t discuss his suggestion in detail, and bring it up only to note that it is very much a minority view. Most theorists are happy to accept that streams of consciousness are temporally extended. The debate about temporal experience is fiercest when it comes to the issue of whether the experiences that compose the stream are temporally extended.

Within an ongoing stream of consciousness we can identify experiences with duration less than that of the entire stream (the visual experience of cornflakes, the visual experience of chips) that compose it. Of these experiences, we can enquire as to whether their temporal extension has an explanatory role to play in giving an account of our experiential relationship to time. For Broad, Dainton, Foster, Phillips,
Soteriou, and myself, it does – let’s call these theorists the Extensionalists. For Le Poidevin, Tye, Chuard, Broad, and certain readings of Husserl, it does not – let’s call these theorists the Atomists.

**Extensionalism:** The temporal extension of experiences has an explanatory role to play in giving an account of our experiential relationship to time.

**Atomism:** The temporal extension of experiences has no explanatory role to play in giving an account of our experiential relationship to time.

2. The Cinematic Account

While there is disagreement between the above Atomists and the Extensionalists, one view that they are all keen to reject is the ‘Cinematic’ account of temporal experience. The Cinematic account begins with the idea, crucial to this paper, that temporally extended experiences occupy intervals of time that are concurrent with their objects. This idea is the ‘Principle of Presentational Concurrence’ – henceforth the PPC:

The duration of a *content* being presented is concurrent with the duration of the *act* of presenting it. That is, the time interval occupied by a content which is before the mind is the very same time interval which is occupied by the act of presenting that very content before the mind. (Miller 1984, p.107)

If we accept the PPC, then experiences are concurrent with their contents. So the idea that the Cinematic account begins with is that temporally extended experiences are concurrent with their temporally extended contents. They then note that these temporally extended experiences ‘unfold’ over time. What we experience from one moment to the next is often in a state of flux or change (consider sitting at a computer, listening to music, seeing your fingers move over the keys, while the washing machine rumbles on).

To capture this near-constant change in experience, the Cinematic account proposes that we should think of temporally extended experiences as consisting of a temporally ordered series of experiential ‘snapshots’. These ‘snapshots’ are minimal experiential units, none of which individually represent change or succession, and each snapshot is concurrent with a certain portion of the object of experience. A psychologically informed account of these snapshots would take them to have an objective duration of approximately 20msec for visual experience, and 2msec for auditory experience, for those are the intervals within which we cannot discern earlier and later temporal parts of a stimulus.

In order to explain how, out of these snapshots, we get experiences as of change or succession, the Cinematic account appeals to the relationships between the snapshots themselves. The view is thus ‘Cinematic’ because of its parallel with Bergson’s remarks about the apparatus of cinema:

...take a series of snapshots of the passing regiment and... throw these instantaneous views on the screen, so that they replace each other very rapidly. This is what the cinematograph does... If we had to do with photographs alone, we should never see them animated... In order that the pictures may be animated, there must be movement somewhere. The movement does indeed exist here; it is in the apparatus. It is because the film of the cinematograph unrolls... that each actor of the scene recovers his mobility... (Bergson, 2001)

The temporal extension of the series, and the relationship of succession that holds between each element in the series, is what is supposed to explain how we get, out of these snapshots, the impression of temporal extension and succession. On this kind of account, it is thus not the temporal properties of individual experiences that explains how we get the impression of temporal extension and succession. It is the relationships between those individual experiences. In this sense, then, the Cinematic account is a form of Atomism about temporal experience.
Of course, the problem with the cinematic account is captured in the familiar maxim that ‘a succession of appearances, in and of itself, does not amount to an appearance of succession. As James (James, 1890, pp. 628–9) and Husserl (Husserl, 1991, pp. 12–3) both noted of the cinematographic account, if I am experiencing a particular snapshot at \( t \), then any previous snapshots will no longer be present in my consciousness, and are accordingly unavailable as part of any explanation of my having the experience as of succession. The cinematic account needs revision if it is to explain the experience of succession and duration.

3. Revising the Cinematic Account

There are three broad ways to revise the cinematic account. The first is ‘Memory Theory’, which holds that the snapshots of the cinematic account need to be supplemented with a contribution from a distinctive form of memory. The second is ‘Specious Present Theory’, which holds that we should think of the stream of consciousness as consisting of a series of near-instantaneous experiences\(^1\), but that each experience can represent duration and succession. Both of these views are atomistic, and reject the PPC.

The third view is Extensionalism. On this view, it was a mistake to think that a temporally extended experience could be analysed into a series of snapshots in the first place. I shall discuss this view in more detail later. At this stage, the key point is to note that Extensionalism is compatible with the PPC. This will prove important, as I will argue that only by holding on to the PPC are we able to explain a phenomenon that Russell called ‘Temporal Presence’.

In *Theory of Knowledge*, Russell distinguishes between two senses of ‘present’ – one of which he calls the ‘temporal’ sense of ‘present’:

>Whatever I experience is, in one sense, ‘present’ to me at the time when I experience it, but in the temporal sense it need not be present – for example – if it is something remembered, or something abstract which is not in time at all. (Russell 1992, p.38)

We can call the type of presence Russell has in mind here *temporal* presence, and we can specify what it picks out loosely by saying that items are ‘temporally’ present in experience if they are experienced as happening ‘now’ or ‘as present’.

**Temporal Presence**: An item is temporally present in experience if and only if it is experienced as happening ‘now’ or ‘as present’.

I have set up the distinction between Specious Present Theory and Memory Theory in terms of how they react to the Cinematic account. However, an alternative way to do this is to appeal to Temporal Presence – for the views disagree about what can be Temporally Present in experience. Specious Present Theorists hold that temporally extended items can be temporally present in experience, whereas Memory Theorists hold that only ‘snapshots’ without discernible earlier and later temporal parts can be temporally present.

**Specious Present Theory**: Temporally extended items can be experienced as happening ‘now’ or ‘as present’. (Broad, 1927, p. 288; Tye, 2003, pp. 86–7)

**Memory Theory**: Only ‘snapshots’ without discernible earlier and later temporal parts can be experienced as happening ‘now’ or ‘as present’. (Husserl, 1991, pp. 40–1; Le Poidevin, 2007, pp. 80–1)

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\(^1\) Sometimes Specious Present Theorists claim that these experiences are actually instantaneous (rather than merely near-instantaneous). I am setting things up in terms of near-instants purely to put to one side issues about whether it makes sense to talk about instants as anything other than temporal boundaries.
As already stated, both of these accounts are Atomistic and, relatedly, both commit to stretches of temporal experience as consisting of a series of near-instantaneous representations of temporally extended items. The below diagram (taken from Tye’s *Consciousness and Persons*) is a representative example of a near-instantaneous act of awareness taking in a temporally extended content.

![Diagram of near-instantaneous act of awareness taking in a temporally extended content](image_url)

The difficulty with the debate between these two varieties of Atomist accounts is that they both have persuasive objections to the other’s view. About the Memory Theory, the Specious Present Theorist argues that when we provide a characterization of how experience seems ‘from the inside’, the phenomenologically salient items we encounter aren’t normally ‘snapshots’, but rather enduring objects and unfolding events. It is thus a mistake to argue that only ‘snapshots’ can be temporally present in experience.

In response, the Memory Theorist suggests that the Specious Present Theory is equally flawed. If the experience of an interval takes place near-instantaneously, they argue, then it can’t be that that whole interval is experienced as Temporally Present, because apart from a snapshot, every temporal part of the interval must be represented as earlier than or later than the temporal location of that experience. And if they are experienced as earlier than or as later than the snapshot, they must surely be experienced as past or as future.

So the debate between the Memory Theorist and the Specious Present Theorist reaches an impasse. The Memory Theorist a good theoretically motivated objection to the Specious Present Theory. The Specious Present Theorist has a good objection to the Memory Theory based upon phenomenological salience. My proposal is that this impasse can be avoided if we adopt a) Extensionalism and b) the PPC. I shall begin by discussing the kind of Extensionalist account I have in mind.

### 4. Extensionalism

Adopting Extensionalism and the PPC means committing to an account in which temporally extended acts of awareness take in temporally extended contents. This account is able to avoid the phenomenological problem facing the memory theorist, as it accepts that the phenomenal character of experience will be best specified via appeal to an interval. It can also avoid the theoretically motivated objection to the Specious Present Theory, as temporally extended items will be experienced over an interval, rather than from a near-instant. There is thus no near-instant from which items must be experienced as earlier or later.

One prominent proponent of Extensionalism is Dainton. Dainton proposes that we conceive of the stream of consciousness as consisting of a series of temporally extended experiences that ‘overlap’ with one another by sharing temporal parts. In *Figure 1* below, we see the stream of consciousness unfolding from t1-t5 as consisting of a series of experiences (1,2, and 3) The pairs of experiences 1,2 and 2,3 have a temporal part in common, but experiences 1 and 3 do not. Each experience takes in a limited temporal interval in order to account for the temporal limits of experience. The idea that there are temporal limits to what can be experienced at any one time reflects the earlier-mentioned fact that the character of a subject’s stream of consciousness typically changes over the course of a period of wakefulness.
The most important component of any Extensionalist theory of temporal experience lies in its explanation of what prevents it from collapsing into the cinematic account. For Dainton, it is his notion of ‘co-consciousness’ (B. Dainton, 2006, Chapter 7). ‘Co-consciousness’ unites different temporal parts of the stream of consciousness into phenomenal wholes in which items are experienced together. Co-consciousness is, for Dainton, a relationship that isn’t susceptible to analysis. Rather, it is a ‘primitive’ feature of his account.

Dainton’s notion of ‘co-consciousness’ is enough to distinguish his Extensionalism from the Cinematic account. However, the unanalysability of the relation makes this act of distinguishing rather explanatorily unsatisfying. In what follows I will defend an alternative kind of Extensionalist account. This account doesn’t appeal to an unanalysable relation. Rather, it appeals to the idea that temporal experience is not homogenous.

5. Homogeneity and Continuity

In a recent paper (The Phenomenal Continuum), Dainton argues that temporal and spatial experience is not homogenous. Over the next two sections, I shall criticize Dainton’s discussion, and provide an alternative account of how to understand the lack of homogeneity in spatial and temporal experience. The particular notion of homogeneity at play here is homogeneity down to instants, and can be set out as follows:

**Temporal Homogeneity**: An experience of something temporally extended consists of a series of experiences of instants.

**Spatial Homogeneity**: An experience of something spatially extended consists of a simultaneous collection of experiences of extensionless points.

These notions of homogeneity are related to the notion of ‘continuity’. If we accept that experience is temporally and spatially homogenous, then for us to experience a region as ‘continuously X’ is for every experience of every instant/point in that region to be as of X. For example, to describe a pink ice cube as
appearing ‘continuously’ or ‘homogenously’ pink is to say that, in Clark’s words, it appears that “…between any two pink points on the cube there is a third pink point.” (Clark, 1989, p. 280)

Dainton argues that conceiving of spatial and temporal experience as homogenous raises a number of awkward questions:

Since these points are zero-sized they lack area or volume, so how can they have colour? It might seem they can’t, but if the basic constituents of our visual sensations are colourless, where do the colours we experience come from? In a different vein, what would happen if a single line of points stretching from the top to the bottom of your visual field were suddenly removed? ... It is no longer a continuous expanse of colour— but would you notice? Given that the points are all of zero-size, how could their removal make any difference to the phenomenal character of your experience? (Barry Dainton, n.d.)

His solution is to propose that experiences can’t be homogenous. Rather, they must be essentially extended. Experiences of spatial and temporal extension might, in some sense, have ‘parts’, but these parts are not punctiform. Rather, they will be experiences of spatial or temporal regions:

If our own streams are essentially extended, they are not composed of strictly momentary experiences: irrespective of how finely they can be sub-divided, their briefest experiential parts or phases will still possess some finite temporal extension. (Barry Dainton, n.d.)

This proposal looks like a sensible way of avoiding the awkward questions posed above. However, Dainton’s discussion arguably doesn’t follow through on this promise to think of experiences as essentially extended. In the next section I shall illustrate this by focussing on his brief discussion of the ‘Grain Problem’.

6. The Grain Problem

The ‘Grain Problem’ was originally introduced by Sellars as an argument against the identification of any homogenous sensation (for Sellars thinks that some sensations are spatially homogenous) with any brain state. Using the example of the perceptual experience of a pink ice cube, he claims that between any two sense impressions of pink there will be a third impression of pink. But between any two neurons, there will not always be a third neuron. Hence the sensation has a property (being homogenous), that the brain state lacks, and they are not to be identified.

The temporal analogue of the Grain Problem is a worry about the identification of the continuous stream of consciousness with any discontinuous brain process – for it appears that the brain processes underlying consciousness are, in fact, discontinuous (e.g. VanRullen & Koch, 2003). Both the spatial and temporal varieties of the Grain Problem rely upon the assumption that conscious experience is homogenous down to instants (For discussion, see Rashbrook, 2011).

Given that the Grain Problem relies upon the assumption of homogeneity, it is surprising that Dainton finds the problem pressing:

One of the reasons why it is so difficult to comprehend how phenomenal states or processes can be physical is the difficulty of seeing how the frenzied activity of the trillions of elementary physical particles in our brains could constitute a homogeneous expanse of (say) phenomenal blue. (Barry Dainton, n.d., p. 28)

It is here that, I suggest, we can see that Dainton has failed to follow through on the promise to think of experiences as essentially extended. In continuing to think of the Grain Problem as a genuine problem, there must be an implicit assumption of experiential homogeneity in Dainton’s account.

2 See also B. Dainton, 2006, p. 95
The Grain Problem arises if we think that, in order to represent an expanse as ‘continuously pink’, we need to appeal to it seeming as if, between any two pink points, there is a third pink point. Analogously, in the case of experiencing temporal continuity, we need to appeal to it seeming as if, between any two instants, there is a third instant. However, if we are rejecting temporal and spatial homogeneity, then we need to think about the experiences of temporal and spatial continuity differently.

I propose that, rather than thinking of the experience of spatial and temporal continuity as requiring an appearance characterized in terms of spatial and temporal homogeneity, we should characterize it in terms of how things don’t appear to the subject. More precisely, we should characterize both the temporal and spatial appearance of continuity as an appearance in which an X object doesn’t appear to have any non-X regions.

On this proposal, for a pink object to appear as continuously pink is for it to not appear to have non-pink areas. For humming to appear as continuous humming, it must not appear that there are any times at which humming isn’t going on – i.e. it mustn’t appear that there are any gaps to the humming. This proposal about continuous appearance requires that the experience of a spatial or temporal extent is taken as primitive. It requires that we don’t conceive of such appearances as being constituted out of spatial or temporal points.

The account of continuous spatial or temporal appearances that I have sketched here doesn’t generate a Grain Problem, as it doesn’t require that the appearance of continuity be characterized in terms of homogeneity. The key lesson that we can learn about the denial of experiential homogeneity from this case is that an account of the phenomenal nature of an experience of a spatial or temporal region doesn’t need to build up from a story about the positive properties of experiences of sub-regions. It doesn’t have to seem that every subregion is pink, or that every subinterval contains humming.

To experience an ice cube as continuously pink is just to experience the ice cube as pink while having no experiences of sub-regions of that ice cube as non-pink. There is no reason to think of experience as making excessive commitments to the way the world is – particularly commitments to the way the world is at points. Likewise, to experience humming as continuous is just to experience humming over an interval, while having no experiences within that interval in which there is an absence of humming. Again, there is no reason to think of experience as committing us to truths about instants.

It is this lesson – call it Anti-Homogeneity – that I want to take forward into a discussion of Temporal Presence:

Anti-Homogeneity: For certain spatial and temporal regions, an account of how these regions feature in temporal experience is explanatorily prior to an account of how their sub-regions feature in experience.

7. Anti-Homogeneity

This proposal about the Anti-Homogeneity of experience fits with a larger picture about the nature of the stream of consciousness. I propose that the stream of consciousness is fundamentally processive in character. A full account of a processive stream of consciousness is beyond the scope of this paper, but I want to sketch how an appeal to process might serve to replace Dainton’s appeal to ‘co-consciousness’.

In his *Tense and Continuity*, Taylor suggests that certain types of time-filling process are heterogeneous. For them to be heterogeneous means that not every sub-interval of that process would, considered in isolation, count as an instance of that process. He supplies the example of chuckling to illustrate this point:
Any sounds emitted in a microsecond during a period of chuckling (at the normal rate) hardly constitute chuckling themselves, but rather appear to stand to chuckling as a sultana might stand to fruit-cake, viz. as at best falling within some period of chuckling though themselves occupying a time too short to constitute such a period. (Taylor, 1977, p. 212)

If we think of the stream of consciousness as a process akin to chuckling – as a heterogeneous (and therefore non-homogenous) process – then we have an explanation for what distinguishes our Extensionalism from the Cinematic account. This version of Extensionalism conceives of the stream of consciousness as a heterogeneous process.3

On the Cinematic account, the character of the stream of consciousness at a time is given by citing the experiential snapshot occupying that time. On this Extensionalist account, it is only possible to provide an account of the character of experience at that time by citing an interval within which the time in question falls. The Extensionalist thus denies that the character of experience at particular times is explanatorily prior to the character of experience over an interval of time.

By conceiving of the stream of consciousness as a heterogeneous process, this variety of Extensionalism avoids the need to appeal to ‘co-consciousness’ in distinguishing itself from the Cinematic view. The denial of homogeneity – the idea that the properties of sub-regions considered in isolation may not be the same as the properties of an overall region – is also useful in enabling us to dissolve worries about Time-Lags. Before using Anti-Homogeneity for this purpose, however, we need to establish exactly what these worries are.

8. Time-Lags

The main purpose of this paper is to argue that we can account for the Temporal Presence of items in experience in terms of the PPC. The claim is that items are Temporally Present in a phase of experience if they are concurrent with it. I suggested above that this proposal enables to sidestep the phenomenological and theoretical objections to the accounts of Temporal Presence provided by Specious Present Theory and Memory Theory. The PPC is the following claim:

The duration of a content being presented is concurrent with the duration of the act of presenting it. That is, the time interval occupied by a content which is before the mind is the very same time interval which is occupied by the act of presenting that very content before the mind. (Miller 1984, p.107)

The difficulty with the PPC, as a potential account of Temporal Presence, is that perception involves Time-Lags. We know that, in visual experience, it takes time for light from the object of awareness to reach the visual system, and there is also evidence that it takes still more time (~80msec) for us to become conscious of the object (Pockett, 2002).

The problem for the advocate of the PPC is that the existence of these Time-Lags appears to be inconsistent with the idea that the act of presenting a content is concurrent with the time interval occupied by that content. More precisely, it appears to be inconsistent if we assume that the objects of experience are mind-independent physical objects.

Given this, it might not seem surprising that Extensionalists tend to either be Sense-Data theorists, who don’t think that the objects of experience are mind-independent physical objects – for instance Dainton and Foster – or to weaken the PPC. Phillips’ ‘Structural Matching’ view can be read as an Extensionalist account which provides such a weakening:

Our stream of consciousness inherits the temporal structure of the events which are its contents. It is important to note that this is a claim about the matching of two temporal structures and so

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3 For detailed discussion of these issues, see (Phillips, 2009; M. Soteriou, n.d.)
makes no commitment to the time of occurrence of an event being the very same time as the occurrence of our experience of that event, nor to the interval of time over which an event unfolds being the very same interval as that over which it is experienced. Time-lag considerations show that either we are subject to a universal illusion, or that such matching is no part of the naïve view. (Phillips, n.d.)

From this brief discussion of these two varieties of Extensionalism (one adopts the PPC and adopts Sense-Data theory; one rejects the PPC and retains Naïve Realism) it might seem as if we cannot combine Extensionalism, Naïve Realism, and the PPC. The remainder of this paper is an attempt to show that we can combine these claims together. My strategy for demonstrating this will take the form of a discussion (and rejection) of the Time-Lag argument against Naïve Realism.

9. The Time-Lag Argument

As well as being important for the purposes of this paper, the Time-Lag argument is of independent interest. This is due to an important difference between it and the argument from Hallucination. The arguments are presented side by side to draw out their similarities and differences:

<table>
<thead>
<tr>
<th>Argument from Hallucination</th>
<th>Time-Lag Argument</th>
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<tbody>
<tr>
<td>1. There are cases of hallucination, in which a physical object seems to be F, when in fact there is no such object.</td>
<td>1. There are Time-Lag cases, in which a physical object seems to be F, when in fact there is no such object.</td>
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<tr>
<td>2. If something seems to be F, there must be some direct object of awareness that is F.</td>
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<tr>
<td>3. So, in cases of hallucination, the direct object of awareness is not a mind-independent physical object. (1,2)</td>
<td>3. So, in Time-Lag cases, the direct object of awareness is not a mind-independent physical object. (1,2)</td>
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<tr>
<td>4. From the subject's point of view, it isn’t possible to discriminate between cases of hallucination, and cases of genuine perception.</td>
<td>4. All cases of genuine perception involve a Time-Lag.</td>
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<tr>
<td>5. So, cases of genuine perception are not any different from cases of hallucination. (4)</td>
<td>5. Therefore, all cases of genuine perception do not involve direct awareness of mind-independent physical objects (3,5)</td>
</tr>
<tr>
<td>6. Therefore, all cases of genuine perception do not involve direct awareness of mind-independent physical objects (3,5)</td>
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Both arguments have a phase establishing that particular cases don’t involve direct awareness of mind-independent physical objects (steps 1-3), and then have a generalising step (steps 4 onwards) in which this result is extended to cases of apparently genuine perception. The first phase of both arguments is rather similar (though the Time-Lag argument’s premises require time-indexing, about which more in section X). The second phase is where the important structural difference lies.

One popular response to the argument from Hallucination amongst Naïve Realists is to reject the move from step 4 to step 5 – the shift from indiscriminability to identity. This mode of resistance is the ‘disjunctivist’ strategy (for a survey of the issues see Soteriou, 2010). However, in the Time-Lag argument, there is no move from indiscriminability to identity – there is just the claim that ‘all cases of genuine perception involve a Time-lag’. This raises the question of what the appropriate Naïve Realist response ought to be. To explore this question, I will examine the Time-Lag argument step by step.
10. ‘There are Time-Lag cases, in which a physical object seems to be \( F \), when in fact there is no such object.’

One of the most commonly discussed Time-Lag cases is our perceptual relationship to stars. Stars are sufficiently far away that there will thus sometimes be cases where, during the time it takes light from the star to reach us, the star has ceased to exist. Let’s say that the property ‘\( F \)’ with which we are concerned in the case of stars is their spatial location. So the physical object (the star) seems to be \( F \) (occupying location \( l \)).

In order for these kinds of case to do the work required of them in providing an argument against naïve realism we need to also specify the relevant time that the claim concerns. The time in question is the time at which the physical object seems to be a particular way to the experiencing subject. However, recall that we are here addressing the Time-Lag argument as Extensionalists. This means that all experiential representation necessarily takes place over time. In order to reflect this, the first premise becomes:

‘There are Time-Lag cases, in which over the interval \( t-t_n \) a star seems to be occupying location \( l \), when in fact there is no such star over the interval \( t-t_n \).’

Of course, phrasing the premise in this way doesn’t alter the fact that there is a Time-Lag in this situation – the star will still have expired long before our experiencing it. This phrasing will, however, become important when we come to consider more everyday cases of purported Time-Lags.

11. ‘If something seems to be \( F \), there must be some direct object of awareness that \( \text{is } F \).’

In non-time-indexed form, this stage of the argument is held in common with the argument from hallucination, and is often referred to as the ‘phenomenal principle.’ (see Robinson, 1994, p. 32) Support for the phenomenal principle comes from reflecting upon a difference between perceptual experience and thought. Perceptual experience involves a direct confrontation with its object in a way that thoughts don’t.

One strategy for rejecting the time-lag argument, or the argument from hallucination, is to reject this premise. This strategy is the Intentionalist strategy. On this line of thought, the fact that something \( \text{seems} \) a particular way to the subject doesn’t require explanation in terms of there actually being a direct object of awareness that is that way. Rather, perceptual experience is representational – and saying that a subject is representing that something is \( F \) falls short of saying that they are directly aware of an item that is \( F \).

The ‘phenomenal principle’ is present in the argument from hallucination. However, as with the previous premise, the Time-Lag argument brings with it a need to specify the relevant time at which the perceptual experience takes place. This means that the second premise will require modification. The relevant time, again, is the time \( \text{over} \) which (for remember, we are extensionalists at this point!) the object of awareness seems a particular way to the experiencing subject. This gives us:

‘If, over the interval \( t-t_n \), something seems to be \( F \), there must, over the interval \( t-t_n \), be some direct object of awareness that \( \text{is } F \).’

This plainly recalls the PPC:

The time interval occupied by a content which is before the mind is the very same time interval which is occupied by the act of presenting that very content before the mind. (Miller, 1984, p. 107)

One common response to the second premise of the argument is to reject it, claiming that a) the direct objects of experience can exist in the past, and b) the premise only has the status of a pre-philosophically/scientifically informed commonsense premise. This commonsense premise, it is argued,
ought to be abandoned in the light of scientific discoveries about the finite speed of light. This combination of claims can be found in Ayer, 1956, pp. 103–4; Chisholm, 1957, p. 153; Smith & Jones, 1986, p. 93.

Of course, given that I am proposing that the PPC constitutes an account of Temporal Presence, I think that we ought to reject the idea that the second premise is a merely commonsense assumption. It is also plausible that the PPC is a phenomenologically grounded claim, rather than something we uncritically assume (see Phillips, n.d.; Rashbrook, n.d.; M. Soteriou, n.d., Chapter 4 for further discussion). The second premise, like the first, is thus something we ought to accept.

12. ‘In Time-Lag cases, the direct object of awareness is not a mind-independent physical object.’

This phase of the argument follows from the first two assumptions, which have now undergone some modification:

**Modified 1:** ‘There are Time-Lag cases, in which over the interval \( t-t_n \) a star seems to be occupying location \( l \), when in fact there is no such star over the interval \( t-t_n \).’

**Modified 2:** ‘If, over the interval \( t-t_n \), something seems to be \( F \), there must, over the interval \( t-t_n \), be some direct object of awareness that is \( F \).’

At this stage of proceedings, the case under discussion is that of a star, which has ceased to exist at some point during the time it took light from the star to reach the experiencing subject. During the interval over which the subject seems to visually experience the star, the star no longer exists, and hence the direct object of awareness at that point cannot be the star.

I have argued that we shouldn’t block the Time-Lag argument during its first phase. The attempt to block the argument will rather concern premise 4 – the generalising step. Assuming that the generalising step is adequately dealt with in what follows, the correct thing to say about these problem cases of extinct stars is that, while the subject might be inclined to judge that the stars are Temporally Present in her experience, she is, in these situations, mistaken about the nature of her experience.

13. ‘All cases of genuine perception involve a Time-Lag.’

We know that in all cases of visual perception, it takes time for the light from the object to reach our visual system. In this minimal sense at least, there will always be Time-Lags involved in visual perception. It is worth noting that the vast majority of items that we visually perceive – the terrestrial objects on the surface of the Earth – won’t have ceased to exist (or even have changed their visual properties) in the time it takes for the light to reach our eyes.

However, given that we don’t just perceive unchanging objects and their properties, but also changing objects, processes, and events – for instance, objects in constant motion, fireworks going off, flashes of light – we can’t entirely avoid the problem by noting that, in most cases, the universal doesn’t manage to change in time to render perceptual experience illusory. It would still be a bad result for the Naïve Realist to admit that cannot directly visually perceive objects that are changing, processes, or events.

With this in mind, some theorists have attempted to resist this phase of the argument by suggesting that visual experience has only a finite temporal resolution, and as such is insensitive to the extraordinarily short Time-Lags that exist in the majority of cases;

But suppose now that the world were changed, so that there really was instantaneous transmission of impulses from the object perceived to the brain… What difference would this make to our perceptions of the same events over the same stretch of time? Surely we have every reason to believe that our perceptions would be exactly the same. Our perceptual apparatus is
simply not sensitive enough to react differently to the tiny differences in time that would be involved, the differences would be unperceivable. (Armstrong, 1961, p. 145)

This strategy is appealingly simple. However, the difficulty with it is that it only works for one kind of Time-Lag: physical Time-Lags due to the speed of light. As already mentioned, there is another kind of Time-Lag: psychological Time-Lags due to the speed of processing in the visual system. These time lags are estimated to be around 80msec by Pockett – and thus duration is greater than the plausible limits upon our temporal sensitivity. For example, the ‘order threshold’ in visual experience (the time that must elapse between two distinct stimuli in order that they be perceived as distinct) is around 20msec.

The kind of appeal to perceptual insensitivity made by Armstrong, Robinson, and Suchting isn’t able to deal with psychological Time-Lags. However, the idea that there is a certain coarse-grainedness or limit to the exactitude with which temporal location can be manifest in visual experience is powerful. In the next section, I will set out an alternative account of our perceptual insensitivity to temporal location – an account that appeals to the heterogeneity of temporal experience.

14. Temporal Insensitivity

I suggested earlier that the version of Extensionalism we ought to adopt combines the PPC with the idea that temporal experience is anti-homogenous. Here are those two claims again:

The PPC: The duration of a content being presented is concurrent with the duration of the act of presenting it. That is, the time interval occupied by a content which is before the mind is the very same time interval which is occupied by the act of presenting that very content before the mind. (Miller 1984, p.107)

Anti-Homogeneity: An account of the phenomenal nature of an experience of a spatial or temporal region doesn’t need to build up from a story about the positive properties of experiences of sub-regions

In denying Homogeneity, we are denying that the character of experience over an interval of time will necessarily be reflected in the character of the temporal parts of that interval, if those temporal parts are considered in isolation. Taylor’s chuckling case illustrates this well – not every temporal part of a stretch of chuckling would, considered in isolation, count as an instance of chuckling.

My suggestion is that we think of the PPC in the same way as we think of Taylor’s chuckling. While the PPC is true of temporally extended intervals of experience, it need not be true of every sub-interval of that experience. That is, while the temporally extended content of a temporally extended interval of experience needs to be concurrent with it, it need not be true that every sub-interval of the content is concurrent with a sub-interval of experience.

Consider a case in which a subject experiences a sudden and extremely brief flash of light emanating from an unchanging, pitch black, sky that they have been meditatively staring at for some seconds. An account of temporal experience that doesn’t deny Homogeneity might propose that we can isolate a an experience that is only of the flash, and not of the unchanging, pitch black sky. On this proposal, there will be a very brief – say, 20msec – experience of the flash. The flash is experienced as concurrent with this brief stretch of experience. This means, given Time-Lags, that the experience of the flash will occur ~80msec after the flash actually occurred. On this way of thinking about temporal experience, experience is not concurrent with its object, and there is an illusion – the temporal location of the flash is experienced as ~80msec later than its genuine location.

See also Robinson, 1994, p. 83; Suchting, 1969, p. 54
On the account of temporal experience I recommend, however, we are able to deny that there is any such thing as ‘the experience of the flash’. This account can agree that there is a temporally extended experience of ‘unchanging pitch black sky, followed by the flash, followed by more unchanging pitch black sky’. The proposal is that experience only ‘commits’ to this temporally extended happening occurring over the interval occupied by that whole experience. If we deny homogeneity, we can deny that each temporal part of the content of that experience is concurrent with a temporal part of the experience itself.

On this proposal, the entire content ‘unchanging pitch black sky, followed by the flash, followed by more unchanging pitch black sky’ is concurrent with a temporally extended experience. However, this experience is silent regarding any more fine-grained information about the temporal location of sub-intervals of that content. One way of phrasing the claim is to say that The PPC is not Homogenous.

The PPC is not Homogenous: Not every temporal part of what is Temporally Present in a temporally extended experience is concurrent with a temporal part of that experience.

If this proposal is to help with Time-Lags, it is necessary that the relevant ‘whole experiences’ that we are talking about here have duration greater than that of the combined Physical and Psychological Time-Lag (~80msec). It must be the case that the minimum duration of an experience is >80msec – so any phase of the stream of consciousness of lesser duration considered in isolation will fail to count as ‘an experience’.

If experience has this duration, then this provides an alternative way of developing the ‘temporal insensitivity’ proposal. All that experience commits us to, as regards the temporal location of its objects, is that they fall within a >80msec window. It will thus be true, in the flash case, that the content ‘unchanging pitch black sky, followed by the flash, followed by more unchanging pitch black sky’ is concurrent with the >80msec phase of experience in which it falls. In the next section, I argue that it is plausible that temporal experience does indeed have a minimum duration of >80msec.

15. A Minimum Duration

Before arguing for the Minimum Duration claim, it is worth first establishing the kind of timescales in question. A minimum experiential duration of approximately 80msec is roughly the duration of two frames of film projected in the cinema at the standard 24fps rate. Noting how brief the relevant time period is will hopefully serve to make the idea of an approximately 80msec minimum duration of experience more plausible.

Dainton attempts to motivate the notion of experiences having a minimum duration by appealing to psychological research (Barry Dainton, n.d., pt. 6). In particular he appeals to work by Efron which suggests that even very brief stimuli – such as flashes of light lasting 1msec – tend to give rise to visual experiences that are >100msec (Efron, 1970a, 1970b). In addition to this citing of psychological research by Dainton, Phillips has argued that the best philosophical account of masking phenomena – such as the colour phi phenomenon – involves thinking of experience as essentially extended over hundreds of milliseconds. (Phillips, 2011)

An alternative strategy for motivating Minimum Durations is to appeal to the phenomenology of temporal experience. The first thing to note is that, if we are asked, ‘what are you experiencing now?’ the items we cite tend to be items with temporal extension greater than 80msec – for instance, utterances of sentences, people walking from place to place, a ball bouncing up and down, etc. The fact that we

5 If this view is right, then our being able to experience items as ‘earlier’ or ‘later’ than one another within an ~80msec window isn’t to be explained by our representing them as concurrent with sub-phases of that temporal window. This might be part of what Dainton is getting at when he posits that experience must have an “intrinsic and directed animation” (B. Dainton, 2006, p. 176)
typically give this kind of answer suggests that the phenomenologically salient stretches of experience are temporally extended over at least hundreds of milliseconds.

Against this proposal it might be argued that our typical answers to this kind of question might be inaccurate, and that we might have a tendency to reply on the deliverances of short-term memory as well as perceptual experience in giving an answer. The appropriate counter-argument here involves noting another aspect of the phenomenology – namely that it isn’t possible, when we introspect, to isolate phenomenologically salient stretches of experience with <80msec duration.

This is due to the fact that experience doesn’t seem, from the inside, to have temporal boundaries manifest in the phenomenology. There is no obvious way, ‘from the inside’, to determine the temporal limits of the stretch of experience that is the stretch of experience I am undergoing now. To see this, we can compare the phenomenology of spatial experience – which does have manifest boundaries – with the phenomenology of temporal experience – which does not.

In spatial visual experience, our sensory limitations with respect to space are manifest in the phenomenology of experience. This point is made by Soteriou in the following:

…When looking straight ahead, any region of space in front of you that you are thereby aware of is presented as a sub-region of a region of space that has that sub-region as part… you are visually aware of something like a cone of physical space in front of you, and we might think of the boundaries of this cone as the boundaries of your visual field – boundaries of the spatial sensory field of vision. (M. Soteriou, n.d., p. 102)

In the spatial case of visual experience, there is featuring in the phenomenology a bounded region within which objects must fall if they are to be perceived. In the temporal case, however, we can discern in the phenomenology no such region. Even if we have reason to believe that there are, as a matter of fact, temporal limits to experience, we can’t be aware of these limits in the same way as we can become aware of the spatial limits of vision. The key aspect of the relevant disanalogy between the temporal and spatial aspects of visual experience is picked out by Soteriou in the following:

In the case of spatial visual awareness one can say something, at least very roughly, about the extent and shape of the region of space (delimited by one’s sensory limitations) that one is visually aware of. One has the impression that it remains relatively fixed over time, and so one has the impression that one can take one’s time in attending to it. One can also notice that it seems to shrink when one closes an eye. (M. Soteriou, n.d., p. 113)

In the spatial case, we can specify something very rough about the extent of visual space of which we are aware. In the temporal case, however, we are unable to do this – we cannot discern the temporal boundaries of experience simply by attending to the phenomenology of perception. Temporal experience doesn’t seem from the inside to present us with bounded temporal regions into which items must fall if they are to be perceived. Rather, everything we experience is experienced as following seamlessly on from what was experienced immediately before.

This consideration suggests that, from the perspective of the experiencer, the phenomenologically salient intervals of experience are intervals that occupying a significant stretch of time. There is no way, from the inside, to carve off a very short stretch of experience that is the one I am having now from the significantly temporally extended stretch of experience that unfolds over an interval of time.

These phenomenological considerations, together with Efron’s and Phillips’ arguments, support the idea that the minimum durations of experience are of an interval >80msec. This, combined with the idea that

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6 See also (Martin, 1992; Richardson, 2010)
the PPC is not homogenous is enough to defend the idea that Physical and Psychological Time-Lags are no threat to either the PPC or Naïve Realism.

16. Conclusion

The idea that temporal experience is not homogenous is crucial in meaningfully distinguishing Extensionalism from the Cinematic view. It also provides a way of resisting arguments from Time-Lags against Naïve Realism and the PPC. This, in turn, provides a strategy for giving an account of Temporal Presence. On the view outlined here, items are experienced as ‘happening now’ or ‘as present’ when they are concurrent with the temporally extended stretch of experience in which they feature.

Given the explanatory power of the denial of homogeneity in solving puzzles about temporal experience (c.f. Phillips, 2011; Rashbrook, n.d.; M. Soteriou, n.d.), it might seem puzzling that more theorists haven’t availed themselves of the notion. I want to end by tentatively suggesting why this might be so. A number of theories of perception need to provide an account of the phenomenal character of experience that doesn’t merely cite the object of perception (as the Naïve Realist can). Accordingly, they need to tell some positive story about what the content of experience is (Intentionalism/Representationalism) or what the genuine objects of perception are (Sense-Data Theory).

The need to come up with this positive story can lead to a tendency to think of the character of experience as given by how things positively seem to the subject (i.e. it seems as if there are no gaps in the humming/it seems as if between any two pink points there is a third pink point). This kind of account seems far less tempting if one is a Naïve Realist, for it is naturally on this view to characterize aspects of certain experiences in terms of one’s insensitivity to features of the physical world (i.e. it doesn’t seem as if there are gaps in the humming/it doesn’t seem as if there are any non-pink regions of the ice cube).

This hypothesis provides a way of explaining a) why Dainton fails to follow through on his avowed denial of homogeneity and ends up thinking the Grain Problem is troubling (for Dainton is a Sense-Data Theorist) and b) why theorists who are currently inclined towards the non-homogeneity of temporal experience tend to be Naïve Realists (Philips, Soteriou, this account).

Bibliography


