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Perceiving Temporal Properties

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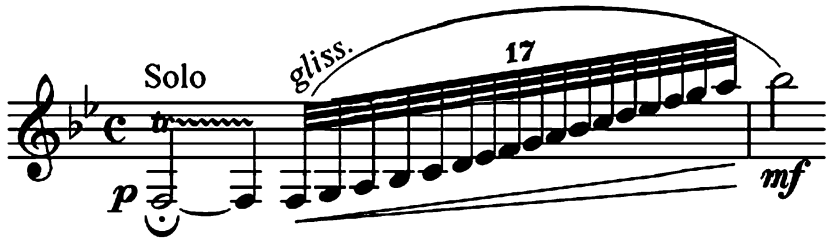
Abstract: Philosophers have long struggled to understand our perceptual experience of temporal properties such as succession, persistence and change. Indeed, strikingly, a number have felt compelled to deny that we enjoy such experience. Philosophical puzzlement arises as a consequence of assuming that, if one experiences succession or temporal structure at all, then one experiences it at a moment. The two leading types of theory of temporal awareness—specious present theories and memory theories—are best understood as attempts to explain how temporal awareness is possible within the constraints of this principle. I argue that the principle is false. Neither theory of temporal awareness can be made workable unless it is rejected. Our experience of temporal phenomena cannot be understood if we attempt to break experience down into instantaneous slices. In order to understand the perception of temporal properties we must look beyond the instant.

1. Puzzlement

Naïvely, we think that myriad different temporal properties and relations can be made manifest in perceptual awareness. Recall, for example, the celebrated opening bars of Gershwin's *Rhapsody in Blue* during which the first B-flat clarinet, starting from a long low trill, crescendos flamboyantly through a smooth two-and-a-half octave glissando to arrive on a sustained minim concert B-flat (see below).



Listening to this passage, our experience seems to present us with various aspects: (a) the alternation of successive notes at the beginning of the phrase, first *piano* and steady, then louder and faster as the trill accelerates; (b) the rapid, long, continuous seventeen note ascent that emerges from it; and (c) the final sustained minim, lingering for a moment before relaxing into the next passage. In listening to the clarinet, we experience persistence, succession, and, with the final B-flat,

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simultaneity—assuming that the rest of the orchestra is brought in on time. We also experience properties logically connected to time such as change in volume, pitch, speed, tone etc.

Evidently, it is not just our enjoyment of music that depends upon the perception of such temporal properties and relations. The world buzzes and blooms around us and we are constantly experiencing the movement, change, persistence, succession and simultaneity of its denizen objects and events.[1] Moreover, we seem to be no less directly acquainted with the temporal structure of the world around us than with its spatial structure. As John Foster puts it,

> . . . duration and change through time seem to be presented to us with the same phenomenal immediacy as homogeneity and variation of colour through space. (1982: 255)

Barry Dainton agrees, calling the direct experience of change and persistence an 'obvious truth' and terming it 'the *phenomenological constraint*' (2000: 114–5).[2]

Obvious as these facts are, they have been the source of profound philosophical puzzlement. Indeed, Kant—arguably the greatest influence on thinking about issues relating time and experience—ultimately denies the 'obvious truth' that we directly experience change and persistence. In particular, throughout the Analytic of Principles, he asserts that 'time cannot be perceived by itself, and what precedes and what follows cannot, therefore, by relation to it, be empirically determined in the object' (2003: B233).[3] According to Guyer, Kant's claim here is 'more intelligibly' rendered as the view 'that particular temporal relations are not directly perceived' (1987: 167). What could drive someone to this extreme view?[4] More generally, why have philosophers struggled to make sense of our experience of succession, persistence and change?

In the first part of this paper, I suggest a principle that lies at the root of the puzzlement. I then show how the two leading, rival theories of temporal awareness—specious present theories and memory theories—should be seen as attempts to explain how temporal awareness is possible in the light of that principle.

In the second and main part of the paper, I argue that for the same fundamental reason, neither of these theories is satisfactory unless it rejects the very principle that drove its motivating puzzlement. Thus, the developments of both theories represent paths which take us back to where we started. However, what stands revealed at the end of our exploring is that the apparent rivalry between memory and specious present theories is illusory. Both theories must ultimately unite in rejecting the background assumption that forces them apart and makes them unworkable. Once this background assumption is rejected, the theories no longer appear to be rivals. What is more, we must reconsider what, if anything, is wrong with a very simple account of temporal awareness.

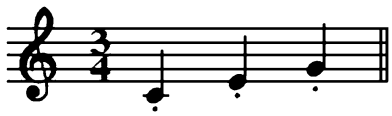
Put crudely, the problematic principle is that if one experiences succession or temporal structure at all, then one experiences it at a moment. I contend that this principle is false; in order to understand the perception of temporal properties we

must look beyond the instant. Our experience of temporal phenomena cannot be understood if we attempt to break experience down into instantaneous slices.

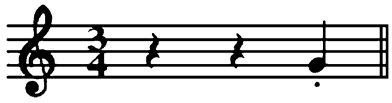
2. Experiencing Succession: A Simple Example

It will help to have an example in front of us. Consider the following very simple case of auditory experience: hearing a *C* major, broken triad played *staccato* and *allegro* on a well-damped piano. Listening as the piano is played, one experiences each of the notes of the broken chord in turn. But one's experience also has an additional aspect which can be brought out by comparing *Case A* with *Case B* where one simply hears a staccato *G* played on the same piano.

Case A



Case B



Cases A and *B* resemble one another in this respect: in both, a small time after the *G*-key has been struck, one hears a *G*. However, intuitively, there is also a difference between the two experiences at this time, *t*. In *Case A*, one does not merely hear a *G*, but enjoys an experience of *succession*. That is, we hear the *G* *following on* from the two previous notes of the triad and not in lonely isolation as in *Case B*. One would be failing to characterise fully how things were for you at *t* if one only mentioned the fact that one was hearing a *G* note.

At *t*, in *Case A*, one is in a position to attend to a series of notes which span an interval of time. This contrasts with a case in which the notes are spread out over a very long period of time. No doubt in this case one might recall the past notes as one heard the *G*, but—assuming the period is long enough—one would not be able to selectively attend to *all* the notes occupying that interval. This, I suggest, supports the thought that, in the slow case, one's experience of the auditory world at *t* would not require mention of successiveness (even if one's overall experience in some way did).[5]

More generally, the datum is this: there are cases (like *Case A*) in which one hears or perceives in such a way that one is able to attend to a structure of notes, events or event parts which occupy a temporal interval.

If what has just been said is right, we can ask: how should we account for such cases of perception, in particular for the additional aspect of experience in *Case A*? A simple-minded account might run as follows.

> The difference between the two experiential situations (*A* and *B*) at time *t* when the *G* is first heard is simply that in situation *A* the subject *has just*

> heard a *C* and an *E* in that order, whereas in situation *B* the subject *has just* heard nothing, merely two beats of silence before the *G*.

According to the simple-minded account, an *irreducibly temporal difference* is appealed to as a way of distinguishing the two experiences, namely the *past* experience of the subject.

This kind of appeal is rejected by almost all participants in the debate. William James articulates the objection thus,

> *A succession of feelings, in and of itself, is not a feeling of succession.* (1890: 629)

Husserl makes the same point:

> The duration of sensation and the sensation of duration are different. And it is the same with [succession].[6] The succession of sensations and the sensations of succession are not the same. (Husserl 1905/1964: 31)

Careful to distinguish between acts and objects of acts, he goes on to make the equivalent point about acts.

> We must naturally raise precisely the same objection against those who would trace the idea of duration and succession back to the fact of the duration and succession of the psychical act. (ibid.)

James' and Husserl's thought is that merely having a series of experiences with differing objects, or one extended experience whose objects change over time, is compatible with the absence of temporal experience. This is, of course, true in many cases. When the triad is played very slowly, merely experiencing each note is not sufficient for my experiencing them as successive.

However, James and Husserl are making a claim about *all* experience. They suggest that all experiences or phases of experience are strictly independent of preceding experiences or experience phases. What we need, therefore, is some way in which our *current* experience can embrace temporal structure. As James puts it, the 'feeling of past time' must be 'a present feeling'.[7] The thought is that at any time, the nature of one's perceptual experience must be based on *the single state available at that time*. Insofar as one is immediately aware of succession or temporal structure, this must be due to that whole structure being represented or presented to you *at that very point in time*.[8]

3. The Principle of Simultaneous Awareness

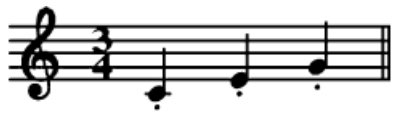
Following Miller (1984), let us call the idea given loose expression above—the claim that if one experiences succession or temporal structure at all, then one experiences it at a moment—the *Principle of Simultaneous Awareness* (PSA). Why

do Husserl and James embrace this principle? I suggest two possible and related reasons.

3.1. The Conceivability of Unawareness

Our question, recall, is whether there have to be further present tense facts which hold at *t* to ground the difference between *Cases A* and *B*—facts over and above the irreducibly temporal facts that clearly do distinguish the two cases.[9] One line of thought motivating subscription to PSA is the following. 'There *must* be such facts, for there is a possible *Case C* which resembles *Case A* except that we have no experience of succession in *C*.' Husserl is explicitly motivated by this thought, insisting that 'it is conceivable that our sensations could endure or succeed one another without our being aware of it in the least' (1905/1964: 31–2).

Case C



Case C, then, is like case *A*—the same notes are sounded and heard at the same tempo and in the same order. However, so the line of thought goes, it is conceivable (and so possible) that one might experience each of the notes individually in *Case C* and yet fail to have an experience of succession as an aspect of one's experience on first hearing the final *G*. More generally, it is conceivable that one might fail to hear *any* relations of succession between the notes over and above the individual sounds. Consequently, one would not be in a position at *t* to attend to the whole triad, spread out as it is, over a temporal interval. If, indeed, *Case C* is possible, it follows that a *merely* temporal difference between *A* and *B* cannot ground the difference in experience.

Even if this strategy is persuasive, however, it is crucial to note that the possibility of *Case C* does not establish that present tense facts (with respect to the time of hearing the final *G*) are *alone* sufficient for experience of succession. It may be that the obtaining of irreducibly temporal facts remains a necessary though insufficient condition. Thus, two strengths of PSA can be distinguished.

Weak PSA Irreducibly temporal facts are *insufficient* to explain the difference between *Cases A* and *B*. There must, in addition, be present tense facts which hold at *t* to explain the difference. It is these facts which do not obtain in *Case C*.

Strong PSA Irreducibly temporal facts have *no* place in our explanation of the *A*/*B* contrast. Present tense psychological facts are necessary and sufficient to explain the contrast.

This distinction is not made in the literature but the strong reading seems to be that intended by Husserl and James. This leads one to suspect that they have additional motivations lurking in the background.

3.2. Russell Worlds

Another motivation, this time for Strong PSA, may be a thesis given vivid expression by Russell in *The Analysis of Mind*.

> There is no logical impossibility in the hypothesis that the world sprang into being five minutes ago, exactly as it then was, ... There is no logically necessary connection between events at different times; ... Hence the occurrences which are *called* knowledge of the past are logically independent of the past; they are wholly analysable into present contents, which might, theoretically, be just what they are even if no past had existed. (1921: Lecture IX)[10]

Taken to its limit, this view holds that all presents facts, and hence facts about our conscious or mental lives, are compatible with the world's having been brought into sudden existence *any* finite time before the present moment and likewise being annihilated *any* finite time after the present moment—I focus on the past in what follows.[11] If our mental lives are (logically speaking) wholly independent of our histories, then appeal to irreducibly temporal facts is evidently ruled out. Purely present tense facts must be sufficient to account for contrasts like that between *Cases A* and *B*.

Russell's claim is one of brute conceivability but one might try and motivate that claim by appeal to further principles that have seemed independently attractive. For example, one *might* claim that the physical facts at a time were path-independent, that is held independently of physical facts at other times. Given this, Russell's thought experiment seems consistent with respect to the physical world; there is no logical impossibility in God creating the world in the state it is in at any moment, yet lacking any history. One might then add a supervenience claim to the effect that the mental facts at a time supervene on the physical facts at a time. This would then commit one to the view that all facts about our conscious or mental lives are compatible with the world's having been brought into sudden existence *any* finite time before the present moment.

I do not want to discuss these arguments here. Rather I want to consider why one might be concerned at being forced to accept Strong PSA and so why one might be inclined to resist the arguments so far given.[12] Broadly speaking, two views of temporal experience have been suggested which attempt to account for temporal awareness within the constraints of Strong PSA. The first kind appeals to the specious present, the second to memory. I shall consider each account in turn. My conclusion will be that for the same fundamental reason, neither succeeds in accounting for temporal awareness whilst respecting Strong PSA. As

a result, we face a choice: reject Strong PSA or deny that we do in fact perceive temporal properties.

4. Specious Present Theory

4.1. SPT and PSA

According to the specious present theory (SPT),[13] at any instant we are aware of an extended period of time. Thus, our experience at a moment literally embraces extended temporal structure. SPT provides a very clear account of how temporal experience is possible despite the constraints of Strong PSA.

However, various standard objections have been raised against this kind of theory. Recently, for example, Sean Kelly argues that our being aware of a duration at a moment 'simply makes no sense' being 'committed to claims about experience that have no sensible interpretation' (2005: 211). Kelly makes a very strong claim here: SPT is an *incoherent* response to the puzzle of temporal experience. Can that be right?

Two of Kelly's three reasons for thinking that SPT is incoherent rest on confusions. Firstly, Kelly thinks that SPT is committed to our being aware of the future and that awareness of the future is impossible. However, such a commitment (coherent or not) is not an essential part of SPT. Indeed, in the course of advocating his version of the theory, Broad contends that 'to sense what has not yet become, would be literally to sense *nothing*' (1923: 358).

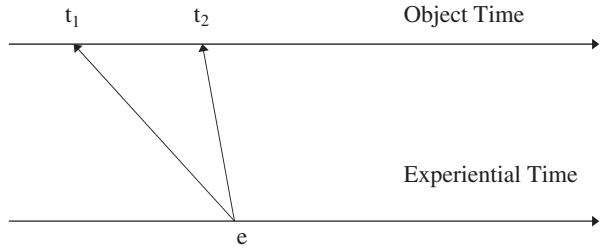
Secondly, Kelly suggests that SPT runs into difficulty in claiming that we are aware of the past. However, arguably, we are often aware of events that are no longer taking place because of time lag considerations. Few, for example, would deny that we see supernovae despite the fact that these occur long before the time of perception. Kelly seems to think that time lag considerations are out of place here, since, supposedly, such an appeal would involve abandoning the claim that we are directly aware of the present. However, even if this were true, it is not an essential part of SPT that I am directly aware of the present (*contra* Kelly 2005: 219; again cf. Broad 1923: 358). The core claim of SPT is simply that at a moment we can be aware of an extended period of time.

Kelly's third objection is much more serious, however. He challenges SPT to make sense of the idea that a *momentary* experience might simultaneously present a number of successive states of affairs *as* successive. The specious present must make sense of this if it is to account for our awareness of succession and proponents of SPT certainly do make such claims. For example, Russell contends that 'Succession can occur within the specious present, of which we can distinguish some parts as earlier and others as later' (Russell 1921: 145; quoted in Kelly 2005: 220).

Kelly's worry about this seems to be roughly the following: what I experience at a moment cannot be experienced *as* successive (as Russell claims). Experience of succession necessarily takes time. Rather, the most SPT can claim is that

successive objects are experienced together. But this then faces the objection that our experience would be like a chord or cacophony rather than a genuine experience of succession.

Though I think this worry is ultimately fatal, Kelly's argument is too quick. More needs saying in order to explain what is wrong with the possibility of experiencing a genuine succession at a moment. For, if we distinguish between the temporal structure of experience and the temporal structure of the objects experienced, it is not obvious why the two should not come apart.[14] That is, what exactly is wrong with the following picture where an experience, *e*, at some one moment is an experience of events taking place at two separated times t_1 and t_2 (see below)? On the one hand, there seems nothing *theoretically* incoherent about this picture. On the other, it is hard not to feel the force of Kelly's worry.



One way of arguing against the idea that we could experience succession (or any temporal interval) at a moment is to argue that, although it is not a theoretical impossibility, it is revealed to be impossible *when we reflect on the nature of our experience*. The following argument offers a way of spelling this out.

(1) **Transparency**. Experience has its own temporal structure. However, when one attends to that structure (that is: reflects upon its nature) it is rational to judge that one's experience is temporally determined in some way (restricting one's reflection to that experience alone) only by taking its temporal structure to mirror the apparent temporal structure of the world experienced, i.e. by making a judgment concerning (and typically perceptually attending to) the apparent temporal structure of the world experienced, and then taking the experience to have that same temporal structure.

(2) Thus, we will always rationally judge an experience *of* succession to be *itself* successive in temporal structure as opposed to instantaneous.

(3) **Seems → Is**. Experience cannot systematically seem some way to rational introspective reflection and yet be some other way. In particular, we cannot make sense of the idea that experience systematically seems to one's rational introspective reflection to possess a certain temporal ordering, when it is not in fact genuinely so ordered.

(4) Thus, *contra* SPT, we cannot be systematically in error when we judge our experiences of succession to themselves be successive in temporal structure as opposed to instantaneous.

The basic thought behind the first claim here is that the temporal aspects of our experience are *transparent*. We can spell this out as follows. Experience itself has a temporal structure—it consists of events and processes which persist through time and occur before and after each other. Thus, time is a common medium to experience and its objects. Yet one's only way of making rational judgments about the temporal structure of experience itself, at least through reflection on one's experience alone, is by taking the temporal structure of the experience to map the temporal structure of the world as it is experienced as being. Thus, if one has an experience as of a tone lasting a second (where one hears every temporal part of the tone), one will also take one's experience to last a second. If one hears an *E* following on from a *C*, one will take one's experience of the *E* to occur after one's experience of the *C*. Transparency is not established by theorizing about how perception must be but rather by reflection on our own experience.

The transparency thesis is then combined in the above argument with a second claim that I have labelled **Seems → Is**. **Seems → Is** is intended to reflect the impossibility of experience systematically presenting itself to rational self-conscious reflection in a way that it is not in fact.[15] This is not the place to consider the various complexities involved in correctly characterizing the relationship between consciousness and self-consciousness—for extended discussion see Phillips (forthcoming). However, note that the argument here certainly does not require that we cannot err in self-conscious judgement. Indeed, since the specious present theory is intended to cover every case of our experience of succession, all that is needed for present purposes is the much weaker claim that our experience is *sometimes* how it seems to rational reflection with respect to its temporal aspect.

Combining **Seems → Is** with **Transparency**, then, we arrive at the idea that we cannot be systematically in error when we judge our experiences of succession or duration to themselves be successive or possess duration as opposed to being instantaneous. This conclusion is incompatible with SPT.

A related form of argument might be developed in a different way by considering coherence constraints on possible experiential lives. Imagine, for reductio, a person in a new Russell world—a world newly created with the aim of perfectly matching some ordinary world at some moment—who at the instant of creation has an experience as of a succession (*G* following on from *E* and *C*, say). Now imagine this person continues to live over time. If creation-instant, Russell world experience of succession is possible, we should be able to imagine that at the next instant, that the subject could have an experience as of a note, say, a *G* again, but this time preceded by two beats of silence. Moreover, from a theoretical point of view, there is no reason to think that this is incompatible with the subject veridically remembering his previous experience of apparent succession at this next moment. Given the commitment to Strong PSA, it is hard to see why this scenario should not be possible since according to it only present tense facts are relevant to what we experience at some moment.

However, when we think about it, we don't seem equipped to make sense of such a case. How could one have an experience of no succession whilst

simultaneously remembering (quite rationally and correctly) that one had just had an experience as of succession? In other words, how could things seem both one way and also another incompatible way to you?

If we reject the possibility sketched, we effectively impose coherence constraints on the kinds of possible experiences and memories one can combine. Yet it is not clear how we could *justify* the imposition of such constraints on experiential lives if one accepts Russell worlds as genuine possibilities. In other words, accepting Strong PSA commits us either to the possibility of seemingly incoherent experiential lives or to *ad hoc* constraints on the kinds of worlds which are possible.

Both these lines of thought require greater defence in order to be thought decisive.[16] Here my interest is rather to show what the core problem with SPT *is*. In particular, I want to suggest that the insights contained in many of the traditional objections to SPT are subsumed by the above argument.

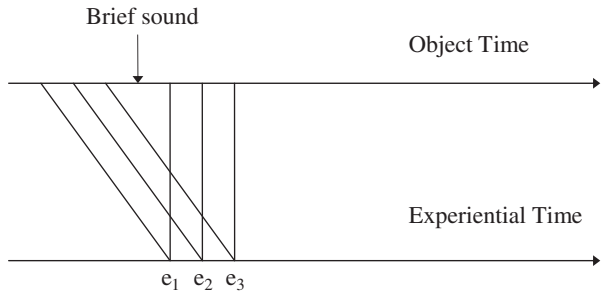
Kelly's objection concerning SPT's capacity to account for experiences of succession is a traditional one. Broad attempts to handle it by arguing that, within the specious present, successive events are distinguished in terms of their degree of what he calls 'presentedness'. The problem with this move is that it is wholly unclear what this mysterious quality *is* (unless it is simply assimilated, implausibly, to vivacity). Thus, as Dummett puts it, in relation to motion perception,

> An attempt used to be made to account for [motion perception] within the specious present theory by saying that when, at some given instant, we had a visual impression of the object as at the position where it was at the time when light from it struck our eyes a short time before the present but within the specious present, we were aware of that visual impression *as past*, but nevertheless aware of it *after the mode of the present*. But what does that mean? It does not mean anything. It is merely a form of words concocted to conceal the fact that we cannot explain the phenomenon in question. (Dummett ms.: 6)

I wholly agree with Dummett here. Yet the objection in question (and indeed the objection Dummett himself raises in the paper just cited) does not get to the heart of the issue. Indeed, one can easily imagine modern representationalists reviving Broad's basic idea. If we are to move beyond such debates we need to recognize the basic problem with SPT as traditionally conceived, namely its wrenching apart of the temporal structure of experience from the temporal structure of the objects experienced.

A second major traditional worry for SPT exhibits the same superficiality. It is articulated by Dainton as follows. If momentary acts of awareness present durations of time, then an event which occurs or a brief sound which is heard during the duration presented by one act will also be the potential object of other experiential acts (see diagram below). But we only hear such sounds or see such events *once*. Indeed, if we take momentary acts with extended durations as

objects seriously it seems we will hear any sound infinitely many times. As Dainton says, 'this is ridiculous' (2000: 141).[17]



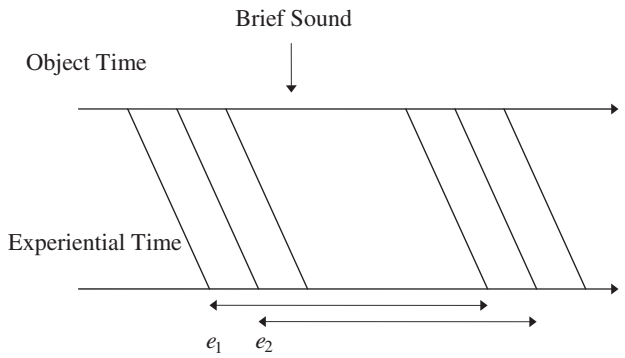
Michael Tye has recently defended a traditional SPT against this objection. He writes as follows (I have adapted his example to fit the present discussion).

> This objection is ineffective. Suppose that there are indeed two different token experiences of [a tone], one for each specious present . . . so that the [tone] is experienced at two different times. Still, it would be a mistake to infer from this that [the tone] is experienced *as* being at two different times or that I, the subject, have an experience as of two [tones].
>
> I hear [the tone] twice in that there are two times at which an act of hearing a [tone] occurs . . . But the [two] times have no time between them at which I experience that there is no [tone]. Indeed, there is no time between these two times at which anything is experientially represented by hearing. So, I do not hear a [tone] *as* occurring twice. It does not *seem* to me that there is a [tone] followed by a second [tone]. (2003: 94)

Tye's response is interesting because it shows how one can respond to the multiple soundings objection only if one is prepared to give up **Transparency** and/or **Seems** → **Is**. If one accepts those claims, his reply fails. According to Tye, despite our having two experiences of a tone, it nevertheless seems that there is only a single tone, occurring at a single time. **Transparency** tells us that rational judgments on the temporal structure of one's experience will match judgments as to the temporal structure of the objects of one's experience. Thus, if things do seem this way we will judge that there is only one moment at which we have an experience of a tone. However, **Seems** → **Is** then entails that we cannot systematically be misled concerning how our experience is; in other words, we cannot systematically be misguided when we judge that there *is* only one token experience of said sound. This conflicts with the claim that the specious present theorist is committed to, viz., that there are always at least two such experiences.

We should reject Tye's proposal. However, if we do so, we can also leave aside the details of the multiple soundings objection. This again merely illustrates the more basic problem with SPT, namely its attempt to pull apart the temporal structure of experience and the temporal structure of the objects experienced.

Theorists like Dainton and Foster, who are sympathetic to SPT, only avoid the two problems just raised (that of accounting for succession and avoiding multiple soundings) by making two moves. Firstly, they insist that experiential acts are never *momentary* but rather always *extended*. Secondly, they claim that such extended acts overlap, that is, literally share common parts (see Foster 1979: 176; Dainton 2000: Ch. 7). Of course, the overlap claim only makes sense in light of the first claim, that is, if our experiential primitives are extended acts. Two momentary experiences can only overlap by being strictly simultaneous. The diagram below illustrates the new picture and how it avoids Dainton's infinite soundings objection. Here, the event of the brief sound being heard in the experience e_1 is the *same* event as its being heard in later overlapping experiences such as e_2.



I consider these moves to be the only way to salvage SPT. For they represent the only way to avoid pulling apart the temporal structure of experience and the temporal structure of the objects experienced. The problem with these moves, however, is that the denial that awareness is 'packaged into momentary acts' (Dainton 2000: 166; cf. Foster 1991: 249) straightforwardly flouts the thought that each new momentary phase of experience might (conceivably) be completely independent of preceding experience phases i.e. Strong PSA.

Consider a situation where you are listening to a sound or melody. Take some moment during that period and consider the Russell world for that moment—a world newly created with the aim of perfectly matching the ordinary world at that moment. In order to match the ordinary world, the Russell world must allow that a sound or melody is being heard at the moment of creation. However, that involves the postulation of a non-momentary act of awareness and thus involves a commitment to there being a past or future beyond the instant in the Russell world. This conflicts with the supposed conceivability of qualitative identity of the world at a time without irreducibly temporal matching. Given this, SPT holds no refuge for a defender of Strong PSA. The principle must be abandoned if we are to account for our perception of temporal structure.[18]

4.2. Foster and Dainton's Overlap Theory

Dainton, following Foster, does not simply reject Strong PSA. Rather he develops a sophisticated reworking of the SPT—the 'overlap theory'—designed to explain temporal awareness. We need to ask though: does this theory really have any work to do once we have rejected Strong PSA?

Recall James' objection to the simple theory, namely that a succession of experiences does not amount to an experience of succession. Dainton offers the following response to this concern in the light of his overlap theory.

> The difference between an experience of succession and a succession of experiences poses no difficulty at all, for according to the overlap theory *every* temporally extended experience is an experience of succession. The experience [of successive tones, *Do-Re*] amounts to an experience of succession for two reasons: first because *Do* is co-conscious with *Re* (and vice-versa), and second, because the content of this experience is a phenomeno-temporal pattern, of *Do-flowing-into-Re*. There is no need to posit a point-like awareness which encompasses both tones. (2000: 180)

Two notions are appealed to here: 'diachronic co-consciousness' and 'phenomeno-temporal patterns'. Let us briefly consider the role each plays in turn.

Dainton tends to talk of co-consciousness both as a relation between acts and as a relation between objects. Thus, whereas in the passage quoted he is talking about the co-consciousness of objects, elsewhere he writes, 'three total experiences X, Y and Z can be such that X is co-conscious with Y, and Y with Z, but X is not co-conscious with Z' (2000: 172). This, in turn, is perhaps explained by Dainton's ultimate rejection of an act-object conception of experience.[19] As a result there is a certain obscurity in his discussion. Nevertheless, as I read it, the central problem with Dainton's appeal to diachronic co-consciousness as applied to either experiences or objects of experience is that it amounts to nothing more than a blunt denial of the claim that each new momentary phase of experience might be completely independent of preceding experience phases. Indeed, 'co-consciousness' seems no more than a piece of terminology with which to frame the rejection of Strong PSA. As Dainton puts it,

> Co-consciousness is a basic experiential relationship, one about which there is nothing more to be said, at least while we confine ourselves to describing how things seem. (2000: 84)

What about Dainton's notion of phenomeno-temporal patterns? Here, Dainton openly struggles with how to account for genuine experience of passage even given the overlap model. As he acknowledges, when hearing *Do-Re*,

> . . . we experience the notes as occurring in a definite temporal order . . . hear *Do* giving way to *Re* . . . hear the first note *flow into* the second note. (2000: 173)

Likewise,

> . . . an individual auditory sensation itself exhibits flow. For the short time it lasts, the tone seems to be extruding itself forward into the future. (ibid.)

Dainton sees trouble because,

> Since the temporal asymmetry is phenomenal, we cannot appeal to memory, and since co-consciousness is symmetrical with respect to time, co-consciousness cannot be the answer. (ibid.)

Now, Dainton is right to think that appeal to a symmetric notion of co-consciousness will not do here. Dainton's solution is to deny that it is the *job* of co-conscious experiences to solve the problem he points to. Rather, it is explained by 'experience itself possessing an inherent direction,' structure and flow. Co-consciousness of overlapping acts only explains why a 'succession of notes is experienced as fully continuous' (176).

In other words, at this point, Dainton directly appeals to irreducibly temporal properties—the flow of experience itself. But, if it is legitimate to appeal to irreducibly temporal properties in the context of explaining our perception of order and flow, why not simply do the same with respect to our perception of temporal properties more generally? Why not simply reject Strong PSA and leave it at that? Once Strong PSA is abandoned, the whole overlap theory looks like unwholesome food served to a man already full.

5. The Appeal to Memory

If one remains convinced of the truth of Strong PSA, one needs to find a different way of making sense of our temporal awareness other than SPT. Let us therefore forget SPT and return to our original scenario of the *C* major triad. Consider the following question: when the final *G* sounds, what happens to our consciousness of the preceding notes? Assuming those notes are not sustained, I no longer hear the *E* or *C* which preceded it. If that is all there is to say about our experience, then it becomes hard to see how we can ever experience the relations two notes bear to each other, and so directly experience succession.

One option would be to say that the preceding notes simply persist in consciousness in the manner in which they were first presented. Of course, the problem here is, as Husserl puts it, that 'instead of a melody we should have a chord of simultaneous notes or rather a disharmonious jumble of sounds' (1905/1964: 30). Brentano sees that we can avoid this unfortunate result if we allow the preceding note(s) to remain in consciousness but in a different way, specifically,

in memorial consciousness.[20] As we presently experience the present tone, we must, according to Brentano, remain aware of the preceding tone or tones in memory. If we did not, 'in each moment we should have only the consciousness of the sensation just produced and nothing further' (Husserl 1905/1964: 32).[21]

Crude memory theories face immediate difficulties and must be modified to cope with them. The crudest of theories will seek to explain our experience of succession in a triad case like *Case A* by claiming that the experience of succession we have at time *t*, when the *G* is heard, arises, because when we hear the *G* sound, we simultaneously auditorily remember hearing the *E* and the *C*. However, as Dainton rightly points out, this theory is insufficient to account for the phenomenon since it is possible to hear a *G* and auditorily remember hearing a *C* and *E* heard many hours or days ago. No theory should predict that this would amount to an experience of succession. Thus, a constraint on any memory theory is that '[m]y memory must register the temporal distance between present and past experiences' (Dainton 2000: 124). Similarly, merely saying that we experience succession because we hear a *G* whilst remembering a *C* and an *E* won't do since that will fail to distinguish between more complex successions. It will fail, for example, to distinguish hearing *C*, *E*, *G* from hearing *E*, *C*, *G* or *C* & *E*, *G*.

The most promising idea that Dainton considers which meets these concerns is an appeal to 'a distinctive sort of memory' which he terms 'immediate short-term memory' (125). In contrast to 'ordinary long-term experiential memory' such a faculty is supposed to provide memories which are 'a lot more complete and accurate than our typical long-term experience-memories' (125) and will also be (wholly?) involuntary and automatic in contrast to ordinary long-term experiential memory which is 'to a large degree voluntary. . . [and] subject to our will' (126).[22]

Such differences in kind, at least prima facie, avoid the initial objection since short-term memories are by their very nature, *short-term*. They are also said to be involuntary, which may meet worries to do with the passivity of temporal experience (cf. Husserl 1905/1964: §20). This principally leaves us with the problem of complex successions. This is avoided if we allow that we can have memories of *experiences of succession*. Thus, the improved account runs as follows.

> First I hear *C*; I then hear [*E*], the experience of which is automatically accompanied by a short-term memory image corresponding to my hearing *C*; I then hear [*G*] and as I do so I have a short-term memory of an *experience* of succession: '*C*-being-followed-by-[*E*]'. (2000: 126)

This sophisticated memory theory has a certain *prima facie* plausibility. However, Dainton contends that the general claim that 'memory is largely or wholly responsible for our experience of time' (2000: 123) is untenable.[23] In what follows, I argue that Dainton's first two objections can be avoided by adopting a non-standard version of the memory theory. However, if this non-standard theory is to avoid Dainton's third objection, it must reject Strong PSA. Thus, in the final analysis, memory theories cannot account for temporal experience within the confines of Strong PSA.

5.1. The Illusion Objection

Dainton's first objection goes back at least to Husserl's discussion of Brentano's version of the memory theory. There, Husserl suggests—and indeed tells us that Brentano concedes—that Brentano's theory is an error-theory. For, according to Husserl, Brentano himself does not see his theory as grounding the direct *perception* of succession and alteration at all. Rather, it explains why it *seems* as if we do so perceive.

> We believe that we hear a melody, that we still hear something that is certainly past. However, this is only an illusion which proceeds from the vivacity of primordial association. (Husserl 1905/1964: 33)

A number of thoughts are conflated here. In particular, there seems no reason to think that we do not often see and hear things that occur in the past—a supernova or a thunder-clap, for example. Nevertheless, Husserl also seems to be pointing out that, on a memory theory such as Brentano's, all we ever *hear* is the current sound *independent* of other sounds. Nothing else is the object of a *perceptual* act. Given this, it seems we have not accounted for direct experience of succession at all.

In reply to the objection, it might be argued that hearing a melody just *is* hearing the current note whilst remembering the past note. But this move does not seem to avoid a point which Dainton raises against Broad's similarly structured theory, viz. that his theory 'has the consequence that awareness of change cannot be as immediate as awareness of simultaneity' (2000: 154). The central thought here is that the memory theorist cannot avoid the consequence that 'perception' of temporal relations, if it should be counted as perceptual at all, is a second rate or derivative kind of perceptual experience. That flouts the phenomenological datum we began with.

5.2. The Complexity Objection

Dainton continues his attack on memory theories by arguing that the more sophisticated, nested memory account is unacceptable on phenomenological grounds. As he puts it,

> . . . the complexity of this proposal counts against it. Simply hearing the sequence *C-D-E* does not seem to involve intricate compound memories of the required sort. (2000: 127)

Even allowing for the specialness of short-term visual memory and its automaticity, there does surely seem something phenomenologically off-key about the appeal being made to such a form of memory in this context. Consider shutting your eyes during a gory scene in a horror film and being unable to avoid visually recalling what you have *just* seen. Assuming this is a case of short-term

memory, (if it is not, we need to press further on that notion) it seems clear that the phenomenology is very different from that of a perceptual act or of any act that takes place during ordinary experience. Worse still, the nested-memory theory is positing a plethora of such experiences. It is hard not to sympathize with a request to know where they are and what phenomenological reality they have when it comes to ordinary temporal experience.

One might object that there is a great difference between *mere* remembering and remembering in combination with perception. However, again, the thought is not very persuasive. If the two kinds of act are discrete and independent, something needs saying to explain our failure to introspect any acts of short-term memory during perception. And the memory theorist seemingly has nothing to say here.

5.3. A Common Theme

The two objections just raised are closely related. In particular, they arise because we make a certain assumption as to what is essential to an act's being an act of memory. Although Dainton allows that the memory theorist may appeal to a certain distinctive kind of short-term memory which is richly detailed and automatic, he nevertheless assumes that the appeal will be to *distinct, discrete acts of recall with their own objects* which occur alongside perceptual experiences. On that picture two things seem plausible.

(a) That it is only the *original* perceptual acts (which acts of recall are joined to or simply simultaneous with) that are genuine acts of direct perception. This grounding the illusion objection.
(b) That temporal experience should be effectively resolvable into a number of distinct and phenomenologically discernible acts which differ only qualitatively from ordinary acts of short-term recall. This grounding the complexity objection.

In the next section, I sketch a way in which we might broaden our conception of how memory might be involved in temporal awareness which avoids these objections. Merely invoking automatic, short-term memory does not go nearly far enough.

6. Retentiveness Without Reminiscence: A Non-Standard Memory Account

In his paper 'In What Way is Memory-Knowledge Immediate?' (1930: 169–70), G. F. Stout considers a nice example of experience of succession, hearing a postman's daily 'rat-tat' on one's door. He remarks,

> There is successiveness: the first knock is heard before the second. There is also retentiveness: the individual's experience, when the second knock occurs, has a character which it would not have if he had not heard the

> first. Further there is *no reminiscence*. In actually experiencing the second sound the subject does not definitely discriminate it as a present occurrence from the first as a past occurrence. The second treads too closely on the heels of the first to admit of such discrimination between past and present as such. So there is no remembrance of the past as such. This just emerges subsequently when the whole experience of having heard the double knock is remembered. (1930: 170)

Stout makes two claims of importance in this passage. Both apply *mutatis mutandis* to any experience of succession.

(1) There is retentiveness: the individual's experience, when the second knock or note occurs, has a character which it would not have if the individual had not heard the first knock or note.
(2) There is no reminiscence (discrimination, remembrance).

How should we think of this combination of retentiveness without reminiscence?[24] The *Oxford English Dictionary* defines 'reminiscence' as:

> The act, process, or fact, of remembering or recollecting; sometimes *spec*. the act of recovering knowledge by mental effort (cf. *recollection*). (Simpson and Weiner 1989)

Thus, reminiscing is something one *does*. It is a distinct mental act with its own character. How should we distinguish retentiveness in contrast to this?

Not by appeal to any standard classification of memory into, say, the procedural, semantic and episodic. These distinctions are distinctions amongst the grammatical *objects* picked out by the complement clauses in sentences of form 'S remembers . . . '. Reminiscence and retention are not distinguished in terms of their objects. Nor is the distinction helpfully thought of in terms of the long-term versus short-term memory or, indeed in the visual case, between short-term visual memory and iconic memory. Crucially, retentiveness is not intended by Stout to be conceived as a distinct mental act or process of re-acquaintance with some particular object, event or event-phase (the 'rat' of the 'rat-tat', for example). If it is not a distinct act, what can we say positively about retention?

The key remark here is Stout's claim that 'the individual's experience, when the second knock occurs, has a character which it would not have if he had not heard the first.' Brian O'Shaughnessy echoes this claim in his recent discussion of the temporal properties of experience in general (which he takes to include intentional action). He then goes on to raise a question of obvious concern for us, 'but why describe this as an exercise of *memory*?'

> The reason is, that had he not been acting [more generally: experiencing] thus in the past he would not be acting [experiencing] thus in the present, so that present experience must both unite with and depend upon past experience. This means that the past must in some sense be *co-present with*

> the present, and such a co-presence is a mode of remembering. Doubtless it is a developmentally early form of memory, to be supplemented later by additional less primitive ways of relating to one's past, notably cognitive modes. What in effect we are concerned with here is the tendency on the part of experience and its given objects to unite across time to form determinate wholes. (O'Shaughnessy 2000: 56)

The important point in these passages is that both Stout and O'Shaughnessy insist

(a) That a subject's current experience can depend constitutively on how they have been experiencing in the recent past; and
(b) That the fact that an act has such a character is sufficient for it to count as a form of memory.

Thus, what it is like to undergo the experience one has of the postman's 'tat,' is constitutively dependent on the fact that it is a 'tat' which has been immediately preceded by an experience of a 'rat'. One would not be experiencing thus in the present were it not for one's experience in the past.

O'Shaughnessy suggests that the constitutive link to the past involved in such experience is sufficient for us to think of such experience as an act of memory. Someone sympathetic to the constitutive claim may resist this further move. At this point, we need to consider a question raised by Mike Martin in his discussion of episodic memory, namely: what, if anything, 'the varieties of memory that we mark out in natural language have in common that should make them all memories?' (2001: 261). Martin's limited positive answer to this question is that all forms of memory are ways of preserving cognitive contact. That is, we should think of memory in general as the retention of past psychological achievement. For example, semantic memory is the preservation of past knowledge, episodic memory the preservation of past apprehension. As Martin puts it,

> Just as we can differentiate the kinds of cognitive contact and the objects they have, so too can we differentiate the kinds of memories that result. We can then conceive of memory in general as the preservation of cognitive contact in general ... (2001: 266)[25]

On Stout and O'Shaughnessy's picture, in hearing succession, one's perception of a past tone does not merely leave a causal trace on current perception. Rather, current experience is constitutively dependent on past experience. This amounts to a retention of a past psychological achievement and thereby to an act of memory.

Martin distinguishes different forms of memory in terms of the different psychological successes retained. We cannot distinguish retention without reminiscence in this way as the object retained is the same as that retained in episodic memory: past perception. However, one possible way of fleshing out the concept of retention without reminiscence in contrast to episodic memory would be as follows. One first notes that listing the objects presented (or represented) in

perception does not suffice to uniquely characterise an experience. To do that one needs to specify the *ways* in which things are presented in experience. These can make a difference to phenomenal content too. Thus, perceptual phenomenology cannot be exhaustively characterised in terms of the presentation of objects. Consequently, experiences with qualitatively identical objects can still differ in phenomenal character so long as those objects are presented in different ways. For example, a 'tat' preceded by a 'rat' can be heard as a successor to a past 'rat', as the second part of a larger auditory event. On the other hand, a 'tat' not succeeding a 'rat' can be presented as emerging from past silence.

In this light, Stout's distinction can be understood as a distinction between two *ways* in which a single kind of cognitive contact can be preserved. In reminiscence, the retained or preserved contact is manifested in distinct acts of episodic memory. In retention, in contrast, past cognitive contact is preserved or retained as part of the character of a fresh act of acquaintance with a present object. The very encounter with the present itself is a way in which cognitive contact with the past is preserved because the way in which the current object of perception is encountered is constitutively dependent upon past experience. When I experience the postman's 'tat', cognitive contact with the preceding 'rat' is preserved as part of the character of the presentation of the 'tat'.

7. Back To Dainton's Objections

Armed with our new understanding of memory as retention without reminiscence, we can now address the illusion and complexity objections raised by Dainton above. On the new model, acts of perception are not joined with distinct acts of recollection so as to 'constitute' temporal experience. Relations of preserved cognitive contact constitutive of memory are not provided from outside the perceptual experience itself, by a concurrent remembering or reminiscence. There is only one act that counts both as a perceptual act and as a manifestation of memory.

As a result, there is no complexity objection. We should precisely *not* expect to find phenomenology redolent of independent acts of episodic recall (short or long term) during perception. The kind of memory involved is quite different—retention *without* reminiscence. There is only one act and only one object. Of course, this object can be seen or heard in complex *ways*. A 'tat' can be heard as successor to a 'rat', a note as a culmination of a glissando, a word as quieter or louder than the preceding phrase.[26] This complexity is no problem, our experience *seems* to be complex in these ways. That is the datum.

The illusion objection arose because the standard memory account began with momentary 'direct' perceptions to which memories were joined. It was then hard to see how the joining of memories to perceptions could really account for our *direct perception* of temporal relations. By taking as a starting point genuinely perceptual acts plus memories, the memory theorist seems to be conceding that experiences of temporal structure are not perceptual acts. At the very least the

theorist must concede that perception of temporal relations is less basic than other forms of perception, that as Dainton put it, 'awareness of change cannot be as immediate as awareness of simultaneity' (2000: 154).

The new single-act theory avoids the illusion object. On this account the perception of the current object of awareness *is* itself a manifestation of one's retained cognitive link to an object of one's past perception. The perceptual act is intrinsically an act of memory. However, there is also no sense in which it is not a perception proper. It is a retention *and* a perception, and in virtue of being *both* a perception of temporal structure. Thus, successiveness is as much a part of perceptual experience as the other ways in which the object is presented.

8. Sounds and Durations

Stout and O'Shaughnessy implicitly reject Strong PSA, holding that *past* perceptual experience is *constitutive* of current experience: one could not be experiencing the way one is now if one had not been experiencing so in the past.[27] However, it is not obvious why an adherent to Strong PSA might not agree that temporal experience must be understood in terms of *the way* the object currently being experienced is being experienced but deny that the individuation of such ways is *constitutively* dependent on past experience. I now argue that if the non-standard memory theory is to be applied to temporal experience *in general*, Strong PSA must be abandoned.

In particular, I want to suggest that, even if the above account can explain our experience of succession (something I see no reason to grant at this stage), it cannot explain our experience of *individual sounds* themselves. To apply the above account to our experience of an individual tone one would need to claim that, at any moment, one's experience was of a 'tone-phase' heard as a continuing on of earlier tone phases—one's current experience being dependent (constitutively or otherwise) on one's prior experience of earlier phases. Whether or not we appeal to a constitutive dependence, this account can seem plausible if we think of how we hear notes sustained over some reasonable period—each current phase is heard as a part of a longer note. However, as I now argue, unless the relation is constitutive, the account cannot be a general one since it presupposes a form of temporal experience, namely our perception of tone phases.

Dainton hints at the problem as follows.

> If phenomenal temporality is wholly the product of memory, ... our experience of even a single brief tone must be explained in terms of involuntary short-term memories. But memories of what? The answer must be: a succession of strictly durationless experiences. (2000: 127)

According to Dainton this view 'suffers from a very severe plausibility problem ... it is hard to believe that we are not immediately aware of some duration in experience. Is a strictly durationless auditory experience even possible?' (ibid.). This central charge is that the memory theory must appeal to

strictly durationless auditory experiences combined with a doubt as to whether such experiences are possible.

What everyone (quite rightly, in my opinion) agrees with is the claim that any auditory experience will present or represent an object as having a duration of some length. As John Foster writes, 'it is inconceivable that there should be a sensation of sound which was not the sensation of a sound-filled period' (1982: 256). Likewise, Husserl insists, 'every tone itself has a temporal extension . . .'(1905/1964: 43).[28]

Now, assuming that we are happy with a distinction between the temporal structure of experience and the temporal structure of the objects experienced, it is not conceptually incoherent to think that we could *at some isolated instant* have an auditory experience, an instantaneous experience of a sound-filled period. However, we are now back to issues encountered in relation to SPT above. There I argued that there are good reasons to reject any theory which attempts to account for temporal experience in terms of our experiencing durations at an instant. When we reflect upon the nature of our experience, we come to appreciate that the apparent temporal structure of experience maps the apparent temporal structure of the world experienced. So an experience of a sound, something which must have a duration, will seem to rational reflection to itself possess a duration. However, in the domain of experience, it is, I claimed, not possible for experience systematically to seem some way to rational reflection, and yet not be such a way. Thus, we cannot systematically be in error when we judge that our experiences of sounds are not instantaneous.

As a result, a theorist who appeals to memory cannot apply that account to all temporal experience unless they abandon Strong PSA for just the same reasons we encountered in the case of SPT. Whichever way we turn, a general account of temporal experience cannot subscribe to Strong PSA.

9. Conclusions and Weak PSA

The traditional and contemporary debates on temporal experience assume that SPT and memory theories are clear rivals.[29] However, in the light of the argument of this paper, they begin to look rather similar. The revised memory theory posits constitutive relations between past and present experience. In order to understand the nature of present perceptual experience, one must look beyond the instant. Similarly, Dainton's revised SPT posits a primitive relation of what he calls 'co-consciousness' between past and present experiences. Again, the thought is that, in order to understand the nature of present perceptual experience, one must look beyond the instant. If one thinks that such constitutive links are sufficient to think of temporal perception as a case of memory, then we can think in terms of a memory theory. On the other hand, it would not be inept to give the name 'the specious present' to that interval of experience standing in constitutive relation to present experience. Thus, the theory in question can also be thought of as a SPT.

Both revised accounts reject Strong PSA. According to both, for example, if one has not been having an auditory experience in some temporal window around

the current moment, one will simply not be in a position currently to have an auditory experience at all. However, this is not quite to say that there is no distinction between the two accounts. It may be that although they do not differ at short-time scales, the memory account can explain perceptual phenomena at longer time scales more adequately than a specious present theory can.

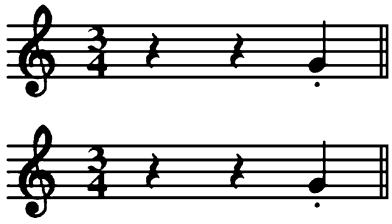
By way of initiating that debate, I want to reconsider how Weak PSA looks in the light of our rejection of Strong PSA. Recall that Weak PSA was the following claim.

> **Weak PSA** Irreducibly temporal facts are *necessary but insufficient* to explain the difference between *Cases A* and *B*. They need, in addition, to have present tense psychological consequences. It is these consequences which are absent in *Case C*.

The argument for Weak PSA was an appeal to a supposedly possible *Case C* where one had an experience of each note of a triad but yet failed to experience the final note as succeeding the tonic and major third heard before it. However, *Case C* does not motivate Weak PSA construed as a universal principle. Read as such, Weak PSA tells us that *merely* having *any* durational/successive auditory experience is insufficient for experiencing a duration/succession. What would support this general claim? Presumably the thought is that *C*-style cases can be conceived in *every* case of temporal experience. In particular, presumably the Weak PSA theorist thinks we must be able to conceive of a distinction between the following two cases.

Case B

Case D



In *Case B*, I have what one might think of as an ordinary experience of a *G* natural. In *Case D*, in contrast, though I experience each individual phase of the note, my experience of the final phase is independent of my experience of preceding phases. If such a case were conceivable it would, as appeal to *Case C* did, show that at least Weak PSA must be true. However, as should be obvious now, at some point this style of argument *must* break down. If it does not, we will be committed to a case where the final instant of our experience is independent of all our previous experience. This either directly flouts the claim that any auditory experience will be an experience of a sound-filled *period* or runs into all the problems of the traditional SPT.

If this is right, then Weak PSA cannot be motivated all the way down on the basis of the conceivability of cases such as *D*. Once this is seen, it must be acknowledged that a simple-minded account must be correct *in at least some cases*—at least when the times in question are very short. In other words, even Weak PSA cannot be a universal principle. Moreover, this problem concerning

the general validity of Weak PSA greatly complicates assessment of any argument such as the one we began with contrasting *Cases A* and *C*. As it was set out above, such an argument did not merely claim that pairs of cases such as *A* and *C* involved *similar* histories. Their histories were claimed to be similar in *all relevant respects* right up to the moment in question, *t*. But the simple-minded theorist now notes that our experience at *t* is not independent of (at least very nearby) surrounding experience. It is thus *not* obvious that one could—at the very moment the *G* sounds—have an experience which was not in part an experience of succession unless there was some difference in history between the two cases. Thus, even if a simple-minded account is ultimately indefensible, more work needs doing to show that it is. On the other hand, what *is* certain is that Strong PSA is untenable if we do not wish to follow Kant and others in their denial that we perceive temporal properties.[30]

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NOTES

[1] This list is not intended as exhaustive. In particular, I am not here taking a stance with respect to the question whether we experience 'A-properties' (presentness, pastness etc.), nor whether we experience the 'flow' or 'passage' of time itself.

[2] See also, amongst many others, Broad 1923: 287, 351; O'Shaughnessy 2000: Ch.1, §3; and Le Poidevin 2004 and 2007: 87.

[3] See further B219, B225, B257 and A183, references in Guyer 1987: 88 and also A33/B49–50.

[4] For another example of extremism see Prichard (1950a) who claims that it is, strictly speaking, impossible to hear sounds. Cf. Prichard 1950b.

[5] Bill Brewer encouraged me to clarify the sense in which we have genuinely direct perceptual experience of temporal properties as opposed to a more general sense of the past's relation to present experience. His own example was of hearing a long, difficult string quartet by Morton Feldman where notes heard an hour ago might still, in some sense, affect one's current experience—giving one a sense of finality, repetition or larger structure. Such cases are not the source of philosophical puzzlement at issue here.

[6] The translation has 'sensation' here but this seems to be a misprint.

[7] James 1890: 628; cf. Husserl 1905/1964: 40 and Miller 1984: 108f.; for discussion see Dainton 2000: 132f. and references in the index therein.

[8] This claim traces back to Kant. Kant makes it most clearly in the A-deduction. Thus at A99 he writes that a 'representation, *in so far as it is contained in a single moment*, can never be anything but absolute unity'. Guyer holds that this is 'the fundamental premise of Kant's transcendental theory of experience' (1987: 171) and comments, '[What this claim] implies is precisely that although, of course, the manifold of subjective states *occurs* or *is given* successively, *knowledge* at any particular time *that* any particular succession of such

states *has occurred* must be based on *the single representational state available at that time*. And this means that an *interpretation* of that state is necessary for the mind to determine the sequence of one impression upon another (as Kant puts it). In other words, the several members of a succession of states are indeed immediately perceived in succession, but there is nothing which counts as *immediate perception of the succession*' (1987: 171–2).

[9] When I talk of 'irreducibly temporal facts' I mean facts whose truth logically depends on states obtaining at times other than the present instant. Purely present tense facts merely causally depend (if at all) on states obtaining at times other than the present instant. Cf. Kripke 1978: Lecture V.

[10] Note that this thesis is not obviously entailed by presentism assuming that the presentist can appeal to irreducibly tensed relations. Nonetheless, it has no doubt often been assumed that such a thesis is a consequence of presentism. For example, Dainton (2001: 107–8) effectively makes this assumption in arguing that the presentist cannot account for our experience of succession.

[11] In what follows, I refer to worlds newly created with the aim of perfectly matching some ordinary world at some moment as 'Russell worlds'. Whether Russell would have been happy taking his argument to the limit is far from clear. The data he proposes as the foundation for his construction in *Our Knowledge of the External World* are explicitly events with a *finite* duration (1914: 166). What Kripke calls the 'holographic or time instantaneous description picture' is a way of thinking about the world once one has taken the Russellian claim to its limit. For discussion see Kripke 1978: *passim*.

[12] One obvious tension I will not explore here is between Russell's temporal isolationism and Naïve Realism. Naïve Realism holds that the phenomenal character of our mental lives is (at least partly) constituted by worldly objects and their properties. If successiveness is one such property which is actualised in our experience, then no such experience could be had in the absence of such successiveness. Thus, the Naïve Realist will need to deny that Russell's thought experiment conceives a genuine possibility. Indeed, given time-lag considerations, the incompatibility of Russell worlds and Naïve Realism goes beyond the presentation of temporal properties in experience.

[13] See, in particular, James 1890, Broad 1923 and more recently Tye 2003.

[14] See Dennett 1991: esp. Ch. 5–6 for forceful and influential arguments to this end.

[15] One way to press this thought: experience is a matter of things seeming a certain way, and if, things seem to seem a certain way on rational reflection, then they *do* seem that way. Cf. Dennett 1991: Ch. 5.

[16] Again, see Phillips (forthcoming) for a much fuller discussion of both arguments and issues concerning **Transparency** and **Seems → Is**.

[17] See also Mabbott 1951, Foster 1979 and Sprigge 1993.

[18] None of this is, as yet, to say that Weak PSA may not be well motivated by the conceivability argument. See §9, however.

[19] See Dainton 2000: 166. The basic thought seems to be that 'it makes no sense to suppose that an act of awareness can apprehend a content of greater temporal duration than itself' (180) and so there is no motivation for the act-object view. I cannot see why this makes no *sense*—though that is not to say that it is a genuine possibility. Moreover, it's not being a genuine possibility would not entail Dainton's conclusion. Perhaps, as suggested above, acts and objects necessarily match in temporal structure.

[20] I follow Husserl's exposition of Brentano's view which he uses as a stalking horse in the opening sections of his *The Phenomenology of Internal Time-Consciousness* (1905/1964). A full treatment of Brentano's view would need to take account of important changes in his position post-dating the theory Husserl sketches.

[21] Early memory theorists such a Brentano and Broad assume that perception and memory are intrinsically the same kind of mental phenomenon. Thus, Brentano holds that 'phantasy-presentations [i.e., imaginings and rememberings] ... differ from sensations [i.e., perceptions] only in their [causal] origin, not in their [type of] content ...' (Brentano 1874/1973: 316; quoted in Miller 1984: 105). Evidently, with this conception in play, no real progress has been made here in responding to the chord-cum-cacophony objection. Fortunately, better accounts of the relation between memory and perception are available. One attractive account is defended in Mike Martin's work. Martin moots a *structural* difference between sensory (episodic) memory and perception. Both types of mental event are directed towards *particular* events and objects. However, the relation is different in each case. Memory is 'the representational recall of... an experiential encounter' (2001: 270) with a particular event or object. That is: when one sensorily remembers an *f*, one does so through recalling (imagining) a particular past occasion of consciously experiencing an *f* (cf. 2001: 273f.). In contrast, perception is a direct (representational or presentational) encounter with said particulars. With this account in play, there will be no straight-forward chord-cum-cacophony objection since the present tone will be structurally privileged within our awareness.

[22] The psychological literature standardly recognizes three kinds of memory systems, in relation to vision, specifically: iconic memory, visual short-term memory (VSTM) and long-term memory. Thus, memory theorists are hardly being speculative in positing distinct kinds of memory. On the other hand, there are evidently empirical factors to be considered if the theorist appeals to a particular system.

[23] Tye (2003: 88) also objects to memory theories. Dainton's arguments are more powerful and effectively supersede Tye's.

[24] Cf. Husserl's closely related distinction between primary and secondary remembrance in his 1905/1964.

[25] Matt Soteriou suggested to me that it would be better to think of what is retained as an *ability* to reacquaint ourselves with the particular past episode of apprehension in question. In the context of the account below one might think of the perceptual act itself as, in part, a manifestation of this just-acquired and possibly very short-lived ability.

[26] Indeed, the various ways one can hear notes is potentially limitless. For example, consider the following remark by Tenney and Polansky: '... for the musician, a piece of music does not consist merely of an inarticulate stream of elementary sounds, but a hierarchically ordered network of sounds, motives, phases, passages, sections, movements, etc.—i.e., time-spans whose perceptual boundaries are largely determined by the nature of the sounds and sound configurations occurring within them' (1980: 205).

[27] However, both philosophers also seem to subscribe to the idea that there must be some present tense consequence of these irreducibly temporal relations. If this were not so, a simple-minded account would have sufficed. Thus, their theory fits best with Weak PSA.

[28] Although Husserl recognizes the problem here, I am not clear what his solution to it is. Indeed, he retains an ambivalence when, for example, he talks about 'a sound (or a tonal phase) in the now point' (1905/1964: 57).

[29] See especially, Dainton 2000 and Kelly 2005 for recent work that thinks in these terms.

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