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# Time Theories and Music Conference

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## Proceedings

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## **Music without the Flow of Time**

### **1. Introduction**

The title needs some explanation! My concern here is not with a kind of music which brings time itself to a standstill (or, less dramatically, seems to do so), but rather with the connection between our experience of music on the one hand and the thesis that time, although real, does not pass or flow.

Music provides a particularly rich form of time experience: to appreciate music is to be aware of such temporal properties as duration, order, simultaneity, repetition and direction. So it provides good test cases for theories of temporal experience. In particular, it sheds light on a long-standing principle of temporal experience, the doctrine of the specious present. So part of my concern is with the connection between our experience of music and the way in which temporal experience is described and explained. But I also want to put this connection in the context of metaphysical views about the nature of time – that is, the nature of time as it really is, independently of our experience. For the metaphysician of time, three questions are particularly pertinent:

- The existence question: are all times equally real, or existent, or are some times unreal?
- The passage question: does time really pass, or is this just a feature of our experience?
- The direction question: what grounds the direction from earlier to later?

Some writers have expressed scepticism expressed about the possibility of giving an account of the mind-independent nature of time (or of anything else), but I want to suggest that this scepticism is unfounded. For one way to test an account of time's intrinsic nature is to see what consequences it might have for an understanding our experience of time, and whether those consequences fit with the observed facts.

We have then these three issues: the nature of musical experience, the nature of experienced time, and the nature of real time. How do they interact?

## 2. Presentism and the atomistic view of experience

Let's begin by setting the metaphysical scene: one answer to the existence question is that there is only one time that is real: the present. This view known as 'presentism'. Although it doesn't logically entail an answer to the passage question, presentism is almost invariably partnered by the view that time passes in reality. The passage of time is thus, on the presentist view, a matter of coming into and going out of existence. The future is as yet unrealised, and when things cease to be present, they cease to be part of reality (for a more detailed account see, e.g., Bourne 2006). This answer to the passage question now provides an immediate answer to the direction question: time has a direction because it passes. The direction from earlier to later just is the direction from past to future. The combination of answers to our three questions is generally presented by philosophers as the intuitive view. It's a view, nevertheless, that I shall want to question.

Does presentism have any consequences for our understanding of temporal experience? The passage of time, as the presentist articulates it, is a series of presents, each enjoying its moment in the ontological limelight before being cast into oblivion. But, according to a well-known argument of St Augustine's, the present is *instantaneous*. Augustine's argument for the instantaneity of the present occurs in the famous discussion of time in Book XI of the *Confessions* (Pincoffin 1961). The key moves are these:

- (1) Anything temporally extended has earlier and later parts.
- (2) Any part that is earlier or later than a present part is not itself present.
- (3) Something is wholly present by having only present parts.
- (4) Anything with earlier and later parts cannot be wholly present. [From 2 and 3]
- (5) Anything that is wholly present cannot be temporally extended. [From 1 and 4]

Augustine's conclusion is that the present has no duration whatsoever. But we might be prepared to contemplate the idea of a smallest possible duration, one that cannot be further divided, and which therefore could be wholly present. That would still make the present

instantaneous, in the sense of having no internal temporal structure—that is, not having earlier or later parts.

Now consider a particular auditory perception – the perception of an F sharp, for example. To count as real by the presentist’s lights, the perception must be present. The same is true of the object of that perception: the sound. But we have just apparently proved that the present is instantaneous. Perception, then, consists of a series of (practically) instantaneous snapshots of the world, and the objects of those perceptions are similarly instantaneous. We might call this the *atomistic view of experience*. As applied to visual perception, the analogy that comes to mind is a cinematic one. As Bergson expressed it: ‘We take snapshots, as it were, of the passing reality...the mechanism of our ordinary knowledge is of a cinematographical kind.’ (Bergson, 1911: 322-3) Bergson goes on to criticise that view. We, too, will see that it runs into problems, but the point to note so far is that there is, perhaps surprisingly, an argument from a metaphysical view of time (presentism) to a view about experience (atomism).

### **3. The specious present**

It is in the context of Augustine’s proof of the instantaneity of the present that the experienced present is described as ‘specious’. The doctrine of the specious present says two things. The first is a thesis about the actual object of experience: that what we experience as happening now actually takes in a period of time. The second is a thesis about the phenomenal content of perception: that what we experience as happening now is experienced as having a temporal structure. The doctrine is associated with William James. He did not coin the phrase, or invent the doctrine—that distinction belongs to the psychologist E.R. Clay—but it was James’ characterisation of it, in *The Principles of Psychology*, that put it on the map. Here is what he says:

We are constantly aware of a certain duration—the specious present—varying from a few seconds to probably not more than a minute, and this duration (with its content perceived as having one part earlier and another part later) is the original intuition of time. (James 1890: 603)

Up to a minute is stretching it a bit. A minute's worth of music could hardly constitute an experienced present – some of it would undoubtedly be recognised as past. But a single phrase could be the object of a single act of awareness. This present is specious in the sense that its boundaries extend well beyond those of the 'objective' present.

Why accept the doctrine of the specious present? It seems we are committed to it if we accept, what seems to be a datum of experience, that we perceive change, and do so in an apparently non-inferential way. As C.D. Broad put it, there is a difference between seeing that the hour hand of a clock has moved and seeing the second hand move (Broad 1923, 351). Seeing that the hour hand has moved involves a comparison between present perception and memory of the position the hour hand was in last time you looked. One infers the movement. But seeing the second hand move involves no such comparison. Since change involves time, if change is the object of a perception, then the object of perception in this case takes up time, confirming the first thesis within the doctrine of the specious present. In the auditory case, it is hard to resist the idea that we perceive change. For what we hear are sounds, and a sound is a vibration, and therefore a change of some kind, which must therefore take up time.

Of course, we can perceive change without perceiving it as change. Consider a very briefly-presented note: although this, being a vibration, is a change, we may not perceive it as such: we may instead perceive it as instantaneous. But some very rapid changes *are* perceived as changes. Consider listening to a rapidly-presented arpeggio: A C E A. The notes occur in a temporal order, and perceiving that order means recognising, within the boundaries of the experienced present, earlier and later parts. This appears to confirm the second thesis of the doctrine of the specious present: we perceive temporal structure within the experienced present.

These are significant results. The first, that we perceive change, looks as though it conflicts with a view of time's true nature, namely presentism. For if only an instantaneous moment is real, reality cannot contain change, for change by definition is not instantaneous. That suggests, in turn, that change cannot be an object of perception, for surely only what is (at some time) real can be perceived. Further, if the perceptual experience cannot be a conscious experience without taking up time, it seems that presentism is incompatible with the fact of consciousness! (See McKinnon 2003.)

Does this also spell the doom of the atomistic theory of temporal experience? Not necessarily. Although presentism supports the atomistic view, the atomistic view is detachable from it. For when that view says that experience consists of a series of instantaneous perceptions of reality, ‘instantaneous’ here need not mean metaphysically instantaneous (that is, not containing earlier or later parts), but rather phenomenologically so: no earlier and later parts can be *discerned* within the experience. But if that is what the atomistic view says, isn’t that directly incompatible with the second thesis within the doctrine of the specious present, namely the thesis that we can discern such a structure within the experienced present?

#### **4. Arpeggios, glissandi and the structure of temporal experience**

The defender of the atomistic view, it seems, needs to cast doubt on the doctrine of the specious present. And perhaps there is more than an air of paradox in that doctrine. If it is indeed incoherent, then it is no threat to the atomistic view. Note James’s remark that the experienced present is perceived as having earlier and later parts. That is, something is experienced both as present *and* as temporally structured. (The same problem arises for experienced duration.) How is that possible?

There is a phenomenological version of Augustine’s argument, which is based on the principle that if an extended stimulus is perceived to have earlier and later parts, then these parts cannot all be perceived as present: if one part is perceived as present, then any part perceived as earlier must therefore be perceived as past. If all parts of the experience were perceived as present, then they should be perceived as simultaneous. Consider the arpeggio: if this is experienced as wholly present, it should be experienced as a chord!

If that argument is sound, it suggests we have to describe the experience of the arpeggio in a different way. How? Perhaps we should represent it as a succession of experiences: A, C, E, A. And insofar as each of those notes was perceived as having a duration, each note would be associated with a series of instantaneous experiences: AAA, CCC, EEE, AAA. Only one of these is experienced as present at any one time.

The immediate objection to this is James's (and it provides part of the argument for the specious present): a succession of experiences is not the same as an experience of succession. How does the atomistic account explain how we get from one to the other? It is implausible to suggest that the experience of succession is itself just another instantaneous experience that somehow gets slotted into the sequence of perceptions.

The obvious reply is that we have to appeal to *memory*: when we perceive the C, we have a memory of having perceived the A, and when we perceive the E, we have a memory of having perceived the E. But now the objection will be raised that we could have these memories and yet not perceive the arpeggio as such: we simply hear isolated notes, and remember having heard others. Something else clearly happens when we hear them close together, so that we perceive the temporal relationships between the parts of the phrase. The further mechanism is a causal connection of a certain kind between the earlier and later perceptions. When we hear the C, our perception is coloured by the short-term memory of perceiving the A, and what emerges from this is a perception of the C succeeding the A (c.f. Mellor 1998, Ch. 10).

So by augmenting the atomistic account by appeal to causal connections between the phenomenologically instantaneous states, we can explain some of the phenomena that led to the doctrine of the specious present. But there is still a problem. The atomistic account makes perception seem a very discrete process, with a clear distinction between one perception and another. But how then do we explain the difference between hearing an arpeggio and hearing a *glissando*, where the pitch of note increases or decreases continuously, as, for example, at the beginning of Gershwin's *Rhapsody in Blue*? Here, we do not simply perceive a succession of notes. Rather we hear the *change in pitch* itself. This, surely, is an illustration of the specious present! If it is, however, it faces the previous objection: perceiving a change in the note seems to imply perception of successive notes, but if these notes are perceived as successive, then (by the phenomenological version of Augustine's argument) they cannot all be perceived as present. How, then, can the change in pitch be perceived as present?

The solution for the defender of the specious present, I suggest, is to distinguish between perception of change in note, and perception of one note as following another. Even if, in

reality, changing pitch just is a succession of different notes, the experience of one is not equivalent to the experience of the other. We can, then, have an experience of changing pitch, as in a glissando, without this amounting to, or being reducible to, the experience of a succession of notes. Hearing the change as present, therefore, is not the same as hearing successive notes as present. The atomistic account cannot permit this, for it tries to reduce the experience of change in terms of the perception of the individual notes. (See Matthen 2010 for a critical discussion of this attempt at reduction.)

## 5. Time without the flow of time

Let's turn back to the metaphysics of time, the attempt to describe time as it really is, independently of our ways of experiencing or conceiving of it. We've seen that presentism makes difficulties for our understanding of the experience of music (and perhaps for experience in general). But presentism is not the only way to make sense of the passage of time. Two other models are available:

- The moving spotlight theory: all times are equally real, but each in turn becomes present.
- The growing block theory: the past and present are real, but the future is unreal; the passage of time consists in events coming into existence, and the sum total of reality gradually being added to.

Without opting for one over the other, why should we be inclined to either of these? That is, is there any indisputable phenomenon that requires the objective passage of time?

Supposedly, the most powerful argument for real temporal passage is an argument from experience: the best explanation of the undoubted fact that time *seems* to flow is that it flows *in reality*. We *seem* confined to the present moment because we *are*. But we've already seen a gap between the 'objective' present (an instantaneous moment) and the present of experience, which is why the later is 'specious'. So whether or not we are confined to the present, this is not what experience presents.

We should also ask what we mean by the 'experience of the passage of time'. Isn't this just the experience of change: of things being a certain way, and then being a different way? That



doesn't have to be explained in terms of passage, i.e. as something's becoming present and then becoming past, because we can be aware of change without being aware of these things (think of the glissando again). We experience the change, *not* the becoming past.

But if there is no passage, how can time have a direction? Without passage, time just seems like space, and space has no intrinsic direction. There is, however, another explanation: the direction of time is not definable as the direction from *past* to *future*, but rather as the direction from *cause* to *effect*. We become aware of things through their causal influence on us: the awareness is later than the event of which it is the awareness because the event is the cause of the awareness. That explains why we cannot perceive (what we call) the future. Perception is a causal process, and the causal arrow runs from the perceived to the perception. But that causal direction also defines the temporal direction: the perceived object is earlier than the perception by virtue of being its cause. Were we to perceive the future (and of course, some people do indeed claim to have this ability), causation would run in the reverse direction to that of time. If we are to define time order in terms of causal order, this 'backwards causation' is impossible, as it is ruled out by definition.

It will no doubt be objected that we can perceive one event as following from another without perceiving the first as the cause of the other, so we cannot simply reduce our experience of time order to our experience of causality. It is true that mere succession can sometimes give rise to the sense of causality. In music, we may feel a sense of inevitability, of the earlier phrases leading into later ones, a crescendo as a causally-connected process, and so on. But let's concede that we can perceive succession without having the sense of causation. This does not undermine the causal theory of time order. Causation enters into the account of our experience in a different way: it is the causal connection between our perception of an A and our perception of a C that brings about a sense of the C as following on from the A, and not vice versa. Again, no mention of objective passage is required.

One reason to resist the argument from experience to the objective passage of time comes from reflecting on the active element in experience. The argument from experience rather suggests that we are mere passive recorders of external events. But perception involves a certain degree of active construction. If we perceive a succession of notes in a musical phrase as being causally connected, as I suggested just now, that is something we bring to the

perception. The notes themselves are not causally connected – not directly, anyway: they arise from a common cause. We perceive what the brain tells us we perceive. A visual example of this is the phi phenomenon. If you are presented with two lights flashing alternately, you see them (particularly if they are viewed slightly off-centre) as a single light moving back and forth. Nothing is in fact moving, but you nevertheless see movement. As we might put it, you see something that is not there. Is there a musical analogue of this phenomenon? If two notes of different pitches are presented alternately, so that the sound is continuous, we are more likely to describe this as a single process (a note from a single source changing in pitch) than as two separate ones (two alternating notes from different sources). If now the two notes were presented to different ears, the resulting effect would perhaps be that of a moving sound, changing in pitch as it moves. A more amusing (though possibly apocryphal) example is described by Ernst Gombrich:

...if we do not play but listen to music, some representation of possibilities to come will be stored in readiness just present to be triggered by the slightest confirmatory cue. There is the story of the unfortunate singer who discovered that he could not sing the highest note in an aria. So he stepped forward and opened his mouth widely and triumphantly while the orchestra made a loud noise. The public ‘heard’ the top note and applauded. The note was as much present in the public’s mind at that moment as the notes that led up to it. (Gombrich 1964, 300)

It is time to sum up. What does music teach us about the nature of temporal experience and of the nature of time itself? On the first of these, musical experience very definitely provides support for the doctrine of the specious present, and in particular the notion that we can perceive change *as* change within the present of experience. But it also suggests that we can perceive that change without that experience being reducible to a series of individual perceptions: the perception of a musical phrase is not reducible (or not always reducible) to perceptions of the individual notes. On the question of time’s mind-independent nature, it seems that musical experience is very hard to reconcile with a presentist view of time. And it also seems that we can describe the character of musical experience without recourse to an objective passage of time. Our experience of music, that is, can take place in a world in which all times are equally real, no time is objectively present, and nothing moves through time—a world, in short, which seems to have a lot in common with the timelessness of eternity.

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