

This is the text of my comments at the Joint Session Symposium on 'Transcendental Tense' on 11 July 1998. The page references to Mr Lucas's 'Transcendental Tense-II' are to the printed version in the Aristotelian Society Supplementary Volume 72 (1998), 29-43.

Transcendental Tense: Reply to Mr Lucas

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Kant says in his *Critique of Pure Reason* that our knowledge of time, for example of when events occur, is *transcendental*. (By 'events' here I mean all objects, other than times, which are located in time.) Part of what he means by calling this knowledge 'transcendental' is that the times we know events occur at are not *objects*. Our knowledge of these times is just a way - a temporal way - of knowing about objects which are *not* times: a way of knowing however that we couldn't do without, and that we must be able to acquire *a priori*, i.e. without deriving it from experience, since we must already have it in order to have any experience at all.

I argue in my paper that while these claims of Kant's are false of *times*, they are true of *tenses*, by which I mean locations in McTaggart's A series: not just past, present and future, but also more restricted locations like yesterday, today and tomorrow. Thus where Kant says that the world contains no times, read either as Newton's absolute times or as Leibniz's temporal relations between events, I say it contains no tenses, read either as temporal regions or as properties of events. I say therefore that our knowledge that this event occurs *today* is not knowledge of today as an *object* in Kant's sense. Tensed knowledge is just a way - a tensed way - of knowing about events and other objects, including dates like 11 July 1998, which are *not* tensed: a way of knowing however that as agents we cannot do without, and that I argue we may well be able to acquire *a priori*, i.e. without deriving it from the content of any experience.

I derive these Kant-like claims about tense from a tenseless theory of time, which I think explains them better than Kant's own distinction between merely *empirically* real tensed phenomena and *really* real - and tenseless - but otherwise unknowable noumena. This tenseless theory of time I only sketch in my paper in enough detail to show how to derive my claims about tense. Apart from that I don't argue for it, since I've done that elsewhere, and all I wanted to

do here was to show what good sense it makes of what Mr Lucas calls 'some of Kant's dark sayings, suitably reinterpreted'.

Now, however, since what Mr Lucas challenges is not so much my derivation of these claims about tense as the tenseless theory I derive them from, I need to defend that theory against his attacks. I haven't of course time to give the full case for the theory, which in any case is now *available* again in a much improved form in the elegant and modestly-priced little volume called *Real Time II*. So here I shall simply reply briefly to the points Mr Lucas makes against it.

First, he shows how Kant's First Antinomy can be answered within a tensed view of time. As I said in my paper, I don't dispute that. I really only discussed that antinomy because Kant's arguments for it make clear his unargued assumption of a tensed view of time, which I suspect is what made his insights about *tense* generate what Mr Lucas rightly labels his 'projectivist' view of time itself.

However, that speculation about Kant's thought processes is neither here nor there, since my paper is not really about Kant but about the status of tense. My main reason for referring to Kant was simply to show how a tenseless theory can extract important truths about tense from Kant's otherwise incredible theory of time.

So the parts of Mr Lucas's reply that I really need to answer are his attacks on my tenseless view of time. Some of these attacks, however, seem to me rather wide of the mark. It is for example a bit rich to accuse me (on p.48) of arguing that 'tensed language is inherently self-contradictory' when, on the contrary, I say in tenseless terms precisely what makes tensed statements like 'The 1998 Joint Session is on now' *true*. Of course being tensed doesn't make that or any other object-language statement self-contradictory, and I never said it did: my theory of tensed language is not an *error* theory. All I've said, following McTaggart, is that trying to give tensed truths tensed truthmakers generates contradictions, which is quite another matter.

To see the difference, take for example true statements about *nobody*, like 'Nobody is smaller than a flea' or 'Nobody is larger than a galaxy'. There is no contradiction in those two statements. But there *would* be a contradiction in taking them to be *made* true by some entity called 'Nobody' having the incompatible properties of being smaller than a flea and larger than a galaxy. *That's* the analogue of my view of tense. There need be no contradiction in our tensed language, only in the view that it has tensed truthmakers.

I also take some exception to being accused (on p.49) of holding that

'truth-conditions [are] all-important and meaning of no significance'. That, for a start, is an obviously false contrast, since one thing that makes a contingently true sentence's truth conditions important is the way they determine or at least constrain its meaning. And far from taking meanings to be insignificant, I take my theory to be strongly supported by the fact that the way in which the tenseless truth conditions of contingent tensed sentences vary with time gives such a good explanation, not only of how these sentences *differ* in meaning from each other - and of course from all *tenseless* sentences - but also of why we cannot do without sentences and thoughts with these temporally variable tenseless truth conditions.

I was even more startled to read (also on p.49) that I thought philosophers didn't need 'to know what o'clock it was, and whether it was time to give a lecture ...'. No such luck. Of course we need to know such things, and therefore to think and speak very often in irreducibly tensed terms. But this does not stop us also making true statements that are tenseless or in other ways non-indexical. Nor in particular does it stop us using non-indexical statements to say what the varying truth conditions, and hence the meanings, of tensed and other indexical statements are.

So of course, as Mr Lucas says (on p.49), 'language needs to conjugate over tenses as ... over the first- and second-persons'. But this doesn't mean that *reality* must be tensed, any more than the existence of truths about nobody requires reality to contain *that* impossible entity. On the contrary, I believe, it is only a tenseless view which, while denying that reality is tensed, exploits the underrated fact that all our thoughts, statements and actions also occur in tenseless time, that can explain why we *do* need to think and speak in tensed ways.

Let me turn now from these mere misunderstandings to issues on which Mr Lucas understands me perfectly but disagrees. The first issue is this. I say we need to understand what 'later' means in order to understand tensed terms like 'tomorrow' - meaning the day that is one day later than today - whereas Mr Lucas thinks it's the other way round.

I admit of course (indeed I insist) that we have an innate capacity for tensed thought, just as we have for its spatial and personal analogues: that is, for thoughts about what's *here*, and at various distances in various directions from here, and about *me* and you - the people *I* am speaking to - and other people characterised by their being related to me in various ways. In short, and in general, we have an innate capacity for indexical thought of all these three kinds - temporal, spatial and personal - all of them equally indispensable and equally

irreducible to their non-indexical counterparts.

I argue moreover that every indexical belief of these three kinds relies on the same basic causal mechanism - simple contiguity of cause and effect - to get the time, the place and the thinker of that belief into its truth condition. But then what, I ask, makes a tensed belief *temporally* rather than spatially or personally indexical? I say it is the fact that having this belief disposes me to acquire *non-indexical* beliefs which are *temporal* rather than spatial or personal. So, for example, what makes my present-tensed belief that I'm speaking *now* a *temporal* belief is that it disposes me to believe, of any tenseless time *t* that I take to be present, that I am speaking at *t*.

If this is right, then our capacity for tensed belief requires us to be able to distinguish times from places and people, and hence to distinguish the different relations which differentiate entities of those three kinds. In other words, we must have a 'later than' concept which differs from any of its spatial or personal analogues. And how we could get such a concept, if not by learning to recognise perceptible instances of it, I confess I have no idea. Which brings me to my basic point of disagreement with Mr Lucas on this matter.

He says (on p.50) that, to him,

some things look future: I duck and blink and flinch as I perceive the approaching danger, and sigh with relief when the dentist at last lays down his drill.

Well, far be it from me to cast doubt on these autobiographical fragments, except to say that they do *not* show that anything looks future, or past, or present. Of course, given the speed of light, we have, for obvious evolutionary reasons, developed the default habit of letting what we see cause us to believe that it's happening *now* - a present-tense belief which then causes us to have related future- and past-tense beliefs, which in turn cause actions and reactions like Mr Lucas's ducking and sighing.

I don't deny that. What I *do* deny is that *what* we see ever *looks* past, present or future in any sense that would, for example, enable us to refute a fortune-teller's claims to be seeing the future in her crystal ball by pointing out that what she is seeing looks past or present rather than future. We can do no such thing, of course, because in *that* sense nothing looks tensed at all.

And *that* is the sense that matters here, since that is what shows that we *could* not have got our concepts of tense by learning to recognise instances of pastness, presentness or futurity that are perceptible as such, since there are no such instances. Whereas the *later than* relation, on the other hand, has *millions* of perceptible instances, among them every perceptible instance of a change

going one way rather than another - like my hand moving from right to left rather than left to right - including, as I say in my paper, all the self-intimating changes in our own experiences. *Those* are the instances that we learn to recognise, thereby acquiring a 'later than' concept and hence, given our innate capacity for indexical thought generally, our capacity for tensed thought in particular.

The second major issue that Mr Lucas and I disagree about is whether I can explain why time is, as he puts it (on p.50),

that pervasive condition of all experience and activity in which I formulate intentions about what I shall do in the future, carry them out in the present and remember them in the past.

He says I can't explain all that; but I can. I do it with causal theories of the difference between time and space, and of how our cumulative memories of our experiences tell us the order - the time order - in which we have those experiences. That is how I show that if tenseless time is, as I argue, the *causal* dimension of spacetime, it must also be Mr Lucas's 'pervasive condition of all experience' or, as Kant calls it, 'the form of inner sense'.

Yet even if I were wrong about all that, it would still not follow, as Mr Lucas claims (again on p.50), that for us tenseless chaps the non-spatial dimension of what we call 'spacetime' might as well be temperature. That's nonsense. What makes spacetime a four-dimensional manifold is the simple fact that objects in space and time can be in *contact* - and hence capable of immediate interaction - if and only if they share determinate values of *four* independent linear determinables: three spatial and one other. That other, by definition, is time. It can't be temperature (or any other linear determinable), simply because two objects being in the same place and at the same temperature is neither necessary nor sufficient for them to be in contact. You can't contact Napoleon now by going to Elba and sharing his temperature: it's not his temperature but his time there that you would need to share to meet him. And that obvious fact is quite enough to show, on any view of time, that whatever time is, it isn't temperature.

Our last major disagreement is over the implications of modern physics for a tensed view of time. The special theory of relativity makes simultaneity and hence temporal presence at a distance relative to a so-called reference frame. I and others have argued that the lack of a single preferred reference frame in special relativity counts against any view of time which makes existence depend on temporal presence, that is, views such as the tensed views that only the present, or only the past and present, exist. There is of course no

problem in taking the earthly *dates* of events ten light years away on Sirius to vary with reference frames when there's nothing to choose between those frames. But no one can seriously take the *existence* of remote objects to vary in this way. It's bad enough to say, as many tensed theorists do, that even on earth the truth value of the *tenseless* statement that Einstein exists depends on when it is made; to add that over a twenty year period on Sirius, its truth value would also depend on a factually undetermined choice of reference frame should strain the credulity even of a tensed theorist.

This is why Mr Lucas claims (on p.54), that today 'most cosmologists use a version of the General Theory [of relativity] with boundary conditions that determine a universe-wide world time'. I think he is wrong about this. Far from modern cosmology supporting the idea of a uniquely privileged reference frame which determines an absolute universe-wide simultaneity relation, I am assured (by no less an authority than the Astronomer Royal ...) that it positively implies that there is no such thing.

The point, as I understand it, is this. Modern cosmology takes the universe to be expanding uniformly in all directions from every point in it. In other words, wherever we are, every distant galaxy, or cluster of galaxies, is receding from us at a rate proportional to its distance from us, the constant of proportionality being Hubble's constant, which is about 37 kilometres per second for every million light years.

This fact lets us define at every point a local *rest* frame, i.e. what it is to be at rest, at that point. This is the frame in which, in all directions, all galaxies at any given distance are receding at the same rate, thus giving Hubble's constant the same value in all directions. This is the frame relative to which we can say absolutely that the earth, or the solar system, is moving through space at such-and-such a speed in such-and-such a direction.

But now consider a galaxy a million light years away which in this sense is at rest, i.e. is at rest in its local rest frame. But of course in *our* rest frame this galaxy is *not* at rest: it's moving away from us at 37 kilometres per second. So its rest frame is, to put it mildly, not the same as ours. In short, although everywhere in the universe *has* a local rest frame, and hence a locally privileged simultaneity relation, these frames are all different, and so therefore are the simultaneity relations they define. And as modern cosmology assumes that there is no privileged point, no centre of the universe - any more than there is a centre to the surface of the earth - this means that there is no privileged rest frame or simultaneity relation. And this means that modern cosmology does *not*, as Mr Lucas implies, counter the argument against tensed theories which I and others

have derived from special relativity. On the contrary, it reinforces it.

Where, finally, does this leave Schrödinger's cat? I agree with Mr Lucas that this moggie should, as Oscar Wilde's Lady Bracknell said of her nephew's imaginary invalid friend Bunbury, 'make up his mind whether to live or to die: this [quantum-mechanical] shilly-shallying with the question is absurd!' But whatever the cat or its owner does, and however we interpret quantum theory, I see no contradiction with what I have just said about modern cosmology.

Of course there can be a first point in the cat's world line at which, as a matter of fact, it is definitely dead, or definitely alive, and no longer in a mere superposition of those two states. That possibility does not require this point to be absolutely simultaneous with any point on the world line of a cat, or anything else on Sirius, or in any other remote part of the universe. And even if it did require that, this would not show that feline wave-functions can only collapse if time is tensed.

In short, and in conclusion, I deny that modern physics gives us any more reason to reject a tenseless view of time than do Mr Lucas's closing claims (on p.55), where he says that

Tenseless discourse leaves out too much. It is difficult to see - he continues - how I could acquire a specifically temporal sense of temporal order without a tensed understanding of time, any more than I could acquire a full sense of personality without some first-personal experience and agency.

I agree with all that. The difference between us is that my tenseless theory of time can explain all that and Mr Lucas's tensed theory can't - except in the trivial sense of entailment in which an inconsistent theory can explain anything. But apart from that, our obvious, and obviously fundamental, ability and need to think and speak in irreducibly tensed ways, which I can explain as a theorem, Mr Lucas can only take to be an inexplicable axiom. That, it seems to me, is not a virtue of his tensed theory of time but a serious defect.