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This paper argues that temporal concepts that appear to involve a relation between an individual and a future event are not, as has often been claimed, directly structured in terms of locations in space and/or motion through space. Instead, the positioning of reified events in space is used to describe the degree of epistemic detachment holding between the individual and the event. This brings metaphorical means of conveying the future into line with recent work on tense and non-metaphorical means. It also shows parallels with the use of epistemic metaphors, such as UNDERSTANDING IS GRASPING, where the reified objects are ideas rather than events.

Keywords: temporal metaphors, ego-reference point, epistemic modality, Aymara

1. Introduction

One of the most important discoveries made by cognitive linguistic investigations into our conceptual make up is that the concepts we possess that are of an abstract, non-tangible, nature utilise structure and inference patterns drawn from our response to, interaction with, and knowledge of the physical world. They seem to be structured metaphorically. For example, our response to, interaction with, and knowledge of such mental entities as facts, propositions or ideas is often described in a similar manner to that of our interaction with physical objects which can be grasped or manipulated in some way. We can grasp a concept, unless it is a slippery one. Alternatively, it may be above us and out of reach or perhaps just at the back of our mind (c.f. Jäkel 1995; Wallington 2010). The claim I shall investigate in this paper is that many temporal concepts are likewise directly structured in terms of something physical, in this case space and motion through it. Thus, Evans (2004: 5) asks:

Why do we use language pertaining to motion through three dimensional space and locations in three-dimensional space in order to think and talk about time?

The following represent both some typical examples but also some surprising gaps or anomalies in what might be expected. One can search back through the past. Events can whistle past and meetings drag. People can chase deadlines, yet also be chased by deadlines. We can move an event forward or

backward, even to the same day. We talk of traditions being handed down and events bubbling up. Hogmanay can follow Christmas, although it cannot be in front of or behind Christmas. Christmas, however, can be in front of us or behind us. Christmas can also be upon us, it can approach us, or we can approach it. On the other hand, 7.17 cannot so happily approach or be approached. Moreover, although both John and Christmas can approach and be in front of us, John can approach from the front, whilst Christmas cannot. Finally, Christmas might now have disappeared over the horizon, a location presumably shared with the future event of Easter, just over the horizon.

As a start towards an analysis, Clark (1973: 50) (also Fillmore 1971) describes a 'Moving Ego' model where "we are moving along [time], with future time ahead of us and the past behind us" and a 'Moving Time' model in which time is viewed as "a highway consisting of a succession of discrete events ... moving past us from front to back".

Building upon the work of Clark and Fillmore, Lakoff (1983) and Lakoff and Johnson (1980, 1999) argue for a number of "elaborate systems of conceptual metaphor" which they claim structure the concept of time and temporality.ⁱⁱ In particular, they argue for a system TIME PASSING IS MOTION, along with two special cases: TIME PASSING IS MOTION OF AN OBJECT and TIME PASSING IS MOTION OVER A LANDSCAPE, which can be equated with MOVING TIME and MOVING EGO respectively. These assume (Lakoff and Johnson, 1980:44) motion relative to an EGO such as 'us', and "the future in front, the past behind". See Moore (2000, 2006), Ahern and Huang (2002), Radden (2003), Evans (2004), Núñez and Sweetser (2006), Zinken (2010), Tenbrink (2011), and others for elaborations or critiques of Lakoff and Johnson's proposals concerning time, including such issues as whether time is purely a mental construct with no independent reality but abstracted from the occurrence of different events, or whether there exists a subjective concept, perhaps one of duration (cf. Evans 2004).

To help refine the question that will be addressed in this paper I shall briefly discuss some recent work by Núñez and Sweetser (2006) (see also Núñez et al. 2006, Moore 2006). In the list of time expressions I gave earlier, I included examples such as '*Christmas is approaching*', '*We are approaching Christmas*' and '*Christmas is ahead of us*'. I also gave '*Hogmanay follows Christmas*'. One might infer from this latter sentence that Hogmanay, on the 31st of December, is behind Christmas, on the 25th of December, and that future events can be described as being behind as well as being 'in front'.

However Núñez and Sweetser argue that lists of such metaphorical usages should be replaced by: "a detailed analysis of the inferential organization of spatial metaphoric construals of time in general" (p. 402). Building on Moore (2000), they argue that "spatial and movement metaphors for time should distinguish between the question of what is moving (time or ego), which has been the focus of the Moving-time and Moving-ego metaphors, from the question of what is the reference point against which movement is construed (ego or time)".ⁱⁱⁱ Ego can be understood as the point of view of the person who is having an experience of past, present, or future. A future-in front, past-behind schema is used in languages like English when an Ego-reference point

is assumed, giving us ‘*Christmas is approaching*’, ‘*Christmas is ahead of us*’, ‘*The summer is behind us*’. The position of Ego can also be equated with ‘now’ giving such sentences as: ‘*Christmas is here*’ or ‘*Christmas is upon us*’. On the other hand, the future-in front, past-behind schema does not apply when what they term a ‘time-reference point’ is used, since this applies to sequences of events. Thus, we do not say ‘**Hogmanay is ahead of Christmas*’ but ‘*Hogmanay follows Christmas*’.

Analysed from the perspective of an Ego-reference point, the list of languages which appear to use a position behind Ego to locate future events shrinks considerably and Núñez and Sweetser (p. 404) claim that: “It [Aymara] is the only case in the literature of a mapping where indeed future (not general posteriority) seems to be metaphorically IN BACK OF EGO”.

However, when using temporal concepts, and in particular those that presuppose an Ego at a deictic centre or ‘now’, one is not restricted solely to metaphor. The first three of the following sentences employ metaphor to discuss the event of Easter, which at the time I am now writing has not yet happened. However the fourth sentence uses the modal verb ‘will’ and the temporal adverb ‘soon’ to describe an event in my future.

- (1) Easter is in front of us.
- (2) Easter is approaching.
- (3) We’re coming up to Easter.
- (4) It will soon be Easter.

Moreover, research into the meaning of time and tense has not been the sole preserve of cognitive linguists and metaphorists. There is a thriving and substantial body of work within more traditional approaches to linguistics, philosophy and A.I., and this work by and large ignores the role of metaphor other than the use of the term ‘time-line’. A recent anthology of important papers on the linguistics of time, ‘The Language of Time’ (Mani et al. 2005) has no papers or even index entry for metaphor. Furthermore, it is not the case that all of the work on time outside of cognitive linguistics takes a logicalist, approach to modelling time, ignoring conceptual and psychological issues. Jaszczolt (2009: 33) states: “The way in which we represent time in semantic theory will then have to directly reflect our conclusion on how humans represent time in thought: semantic representation will follow mental representation ...”.

But if time is represented conceptually in terms of motion through three dimensional space and locations therein, as the study of the metaphorical representation of time would seem to suggest, then we might expect that conclusions on how humans represent time in thought when non-metaphorical means are being used would also show the role of space and movement. I shall argue that this is not the case, at least not directly.^{iv}

In what follows, I shall largely concentrate on how events that have not yet happened are conceptualised and summarise recent work taking a non-metaphorical perspective suggesting that it is epistemic modality -from the Greek *επιστήμη* meaning knowledge- that underlies our conceptualisation of

future events. It is the degree to which the speaker has full or direct knowledge or awareness of an event.

This would appear to represent a conflict in how temporal information is conceptualised. However, I shall argue that research into the non-metaphorical meaning of time tense and the future and research on the metaphorical representation do converge. I shall argue that space is not used directly to represent time, but rather that objects in a space around Ego can be used to convey issues of certainty and uncertainty and of planning. A prediction of this is that in certain circumstances it might be possible to find future events in languages such as English in places other than in front of Ego including behind contra the claim made by Núñez and Sweetser.

2. On the Nature of the Future Tense

A traditional claim, still widely made outside of linguistics, is that English has three tenses: the past or preterite, the present and the future. The past and present are marked by verb inflection. The future is marked by a tense auxiliary, 'will'. Thus we have: '*It was Christmas*'; '*It is Christmas*'; '*It will be Christmas*'. However, it is now widely argued that English does not have a future tense. Consequently, it is not futurity that 'will' is marking, but something else.

Huddleston and Pullum (2001: 52) state: "English has no future tense: will and shall belong grammatically with must, may, and can, and are modal auxiliaries, not tense auxiliaries". See also Huddleston and Pullum (2001: 208-12) and Huddleston (1995). Similarly, Allan (2001: 358) writes: "Although often spoken of as a tense marker, English 'will' and its past tense 'would' are primarily modals". Sarkar (1998: 21) concludes: "Will equals the modality of prediction plus PRES tense morphology".

An argument that English 'will' (or any other marker of the future tense) is not a future tense auxiliary is that it is not required for talking about the future. Instead, a range of verbs including modals such as 'may', auxiliaries such as 'be', and main verbs such as 'come' and 'go' can be used. Various adjectives such as bound and certain or about can be used with infinitival complements. In addition, the present tense can express a future time. Finally, the examples of metaphor that are the topic of this paper seem to express the future. Moreover, 'will' possesses a past tense form 'would', which would be odd for a future tense marker.

Thus, 'will' can be used to express the expectation that a train, although not here now, is likely to arrive.

(5a) A train will come (at nine).

However, all of the following are also possible. Note that in 5b, 5d, 5e present tense morphology is used on the main verb:

(5b) A train comes at nine.

- (5c) A train is to come at nine.
- (5d) A train is coming at nine.
- (5e) A train is going to come (at nine).
- (5f) A train is bound to come (at nine).
- (5g) A train is certain to come (at nine).
- (5h) A train is about to come.
- (5i) A train may come (at nine).

Amongst all these instances of future reference, there seems to be no reason to privilege the modal verb 'will'.

Moreover, 'will' is not just used to convey the future, or the apparent future. It conveys a wide range of meanings, including volition, obligation, inclination, habituation, tendency, inference, and prediction. For example, 'X will P' can mean that 'X' is determined to do 'P'. In examples such as 'you will eat your dinner', it is likely to mean that 'X' is obliged to eat her dinner, not that 'X' will eat dinner at some future time. It can mean that 'X' has a regular habit of doing 'P' - as usual, he will submit his paper at the last minute. It can mean that 'X' can be inferred to be doing 'P' right now -he will be at a friends-, or is predicted to do 'P': 'I expect that he will spend the night at a friends'.

Since 'will' in general has a meaning that conveys different types of modality and since 'will' is not required for conveying the future, then it seems reasonable to assume that when 'will' is conveying what appears to be the future, what it is doing instead is explicitly conveying a particular type of modal relation that holds between Ego and an event Ego has not experienced, just as the contrasting 'may' in '5i' does. But what about the other examples in '5' that describe a relation between Ego and an unexperienced event? One can make the hypothesis that they too describe a (implicit) modal relation, even though not all the examples contain an explicit modal marker. Indeed, the different ways of describing the relation between Ego and the unexperienced event can be argued to differ with respect to certainty, with the present tense forms such as '5b' -sometimes called the futurate- seeming to express a higher degree of certainty than '5a' which uses 'will'. Jaszczolt (2009: 35) argues:

Just as the *semantic category of temporality* is not basic and can be traced back, both diachronically and synchronically (i.e. with respect to semantic properties) to the category of modality, so the *conceptual category of time* can be shown to be none other but a conceptual category of modal detachment.

In short, "The concept of time supervenes on a more basic concept of modal possibility, epistemic detachment".

A similar view is taken by Ludlow (1990: 163) who suggests that tense and temporal reference is most likely: "a mixture of modality and evidentiality". Relatedly, Steedman (2005: 5) notes: "The first thing to observe about the temporal ontology implicit in natural language is that it is not purely temporal." He concludes (2005: 73) that "the semantics of tense and aspect is profoundly shaped by concerns with goals, actions and consequences".

What I shall argue in the next two sections is that it is also the case that the metaphorical examples involving Ego and a location or Ego and an approaching event -although not necessarily those involving different events in a sequence- do not directly describe the future, but rather epistemic modality.^v Thus they cannot be taken as evidence against the view that the future should be understood as being modality, but rather provide support for such a view.

3. Knowledge and Certainty in Metaphor

I shall assume the approach to metaphor advanced in Wallington (2010), which is located within the broad ATT-Meta approach to metaphor (see Wallington et al. 2006; Barnden 2008). This approach stresses the role of information gained by inferencing in metaphor interpretation. It does not seek direct correspondences or mappings between a source and a target for all aspects of the source; many of these entities or aspects of the source will not have a target equivalent. Instead, they are there to allow certain specific types of information to be inferred.

This information is used to expand a more basic metaphor along certain dimensions applicable across different metaphors. It is among these dimensions, I argue, that significant generalisations concerning metaphor are to be found; not in identifying particular domains of source concepts that map onto domains of target concepts. I will not attempt to argue this point here, but see Wallington (2010). For the purposes of this paper I shall stress the role of degree information, information concerning (un)certainty and information about the mental/emotional state of Ego.

One of the most basic ontological metaphors is to reify all sorts of concepts as physical objects. For example, ideas are expressed as objects (IDEAS AS OBJECTS), but so too are problems, solutions and events (EVENTS AS OBJECTS). Now physical objects must exist in a physical space. If Ego can also be assumed in the same physical space, then Ego can potentially interact, fail to interact, or only partially interact with these objects. Moreover Ego can interact with the objects in a number of ways that can be exploited for metaphor. In particular, with the objects representing reified problems, solutions, ideas, etc. the following basic metaphors can be utilised which have to do with Ego's knowledge of the ideas etc: 'MENTAL ANALYSIS IS MANIPULATION' (Jäkel 1995; Wallington 2010) and KNOWING IS SEEING. Consider the following examples:

- (6) I'm working on an idea I have in mind.
- (7) I have an idea in the back of my mind.
- (8) It's a long shot.
- (9) He is exploring the darker corners of his mind.

Sentence 6 is a relatively straightforward. Ego is working on or manipulating the idea and so has a relatively high degree of knowledge about the nature of the object-idea and its properties.

Sentence 7 involves an extension of this basic metaphor. The idea is not just in the mind, but in the back of the mind. This is an example of aspects of the source not requiring a correspondence in the target. The speaker of this sentence is expecting that an inference can be made that ideas/objects at the back of a space, and so distant from Ego, can only be manipulated to a limited degree. This information will transfer to the target conveying the information that the idea too can only be analysed to a limited degree and that Ego has only limited knowledge about it or a limited ability to properly examine it.

In sentence 8, shooting an object is usually a very direct form of manipulation. However, if the target is a 'long shot' then there must be considerable uncertainty as to whether one will be able to hit/manipulate the idea.

Finally, sentence 9 can be analysed along similar lines to sentence 7 with the exception that a KNOWING AS SEEING basic metaphor is used instead of MENTAL ANALYSIS IS MANIPULATION. However an additional inference can be made triggered by connotations of the word 'dark'. People are fearful of the dark and of what it might contain. This mental/emotional state concerning the thoughts/objects that might be found will transfer to the target.

In short space can be exploited because objects can be placed in the space to allow different degrees of interaction with Ego and hence knowledge. I would argue that this is exactly what we need when talking of future events.

4. Future Locations

Before looking at some data, I wish first to make a few comments about an ambiguity in our use of terms such as Easter. Easter is both a time or date in a Calendrical system -this year, 2011, on the 24th of April- and an event at which I expect certain activities to take place and which can involve some planning. For example, I know that this year I shall be spending Easter with my in-laws in Greece. I have already booked a flight, but I don't know much about what is happening when I arrive. To talk of Easter, then, is to use a metonym of a date or time for an event. On the other hand, if I were to choose a random time, then it is likely that no events would be planned for that time. Given this distinction, consider the following two sentences involving the metaphorical use of space and time to convey the future.

(10) Easter is approaching.

(11) 7.17 is approaching.

Sentence 11, if it expresses just a time, is unacceptable. However, if the time 7.17 has some important consequences for me -perhaps it is the day of my flight and my flight leaves at 7.17- then sentence 11 flips its status from unacceptable to acceptable. The time, however, remains the same in both cases. I conclude from this that it the event rather than the time per se that is being treated metaphorically in such time and movement metaphors, and in particular it is the potential consequences that the event can have for us.

With this in mind, I shall return to the issue of the location of future events. If

non-metaphorical suggestions coming from the analysis of tense and temporal semantics is that time is a modal notion, then it would be odd if the need for a temporal future re-emerges in metaphorical analyses of events located around Ego. So where are future events typically located? Almost all the discussion of the issue has assumed examples such as the following express possible locations for events in the future: 'Easter is in front of us'; 'Christmas is in front of us'; 'the holidays lie ahead'. It is also typically assumed that in sentences such as 'Christmas is approaching', Christmas is approaching Ego from a position in front of him/her, although there seems no reason to assume this from the sentences themselves. Indeed, sentences such as 'Christmas is approaching from the front' are unacceptable.

To look for typical examples, first a search of the British National Corpus (BNC) and then an internet search was conducted. Very few examples of sentences containing the words 'Easter' or 'Christmas' or 'holidays' followed by the words 'lie(s)' or 'is in front' were found. A similar search was then made for the phrases *event is ahead* and *event lie(s) ahead*, where again the three events chosen were 'Easter' 'Christmas', or 'holidays'. As before, the sentences could continue or start in a number of ways. Again, no examples were found in the BNC, but the following results were obtained from the internet search:

Easter is ahead ...	30 hits
Easter lies ahead ...	23 hits
Christmas is ahead ...	47 hits.
Christmas lies ahead ...	46 hits
holidays are ahead ...	76 hits
holidays lie ahead ...	24 hits

Note that the results are broadly of the same order of magnitude.

A further search was then conducted for a different location. This time the phrase 'around the corner' was used and the number of hits was substantially higher, by roughly a factor of 10.

Easter is around the corner	607 hits
Christmas is around the corner	790 hits
holidays are around the corner	739 hits

A note ought to be added about how Google™ was used. As already noted, the phrases being searched for were put in quotation marks, so that the exact wording or phrase is being searched for. When the results were returned, I ignored the headline count figures, such as "About 1,550,000 results". Instead I checked through successive pages of results until the last results page was reached. This page displays a note such as the following: "*In order to show you the most relevant results, we have omitted some entries very similar to the 790 already displayed*". It is of course possible that the figures were inflated by virtue of the same report, song lyric, website and so on containing the words being referenced from a large number of different sites. However, a

cursory examination suggested that this was not the case. The broad similarity of the figures and the similar differences in order of magnitude from the earlier phrases would seem to support this. It is also well-known that counts vary from day to day and the exercise has been repeated on a number of occasions, with different counts being given. However, the difference in magnitude between the 'round the corner' results and the 'ahead' results has stayed similar. It would seem then that events such as Easter are typically not viewed as being directly ahead of us, at least in the line of vision. They may be thought to be in front of us, but their shape or details cannot be seen.

What I shall show now is that there are sentence containing future events which flatly contradict the view that the future is conceptualised as being in front of Ego. Consider the following.

(12) Where are you both regarding the digital movement coming up behind us?

Joey: Digital is here, it's not behind us.

[Laughs] Josh: Yeah, it's not behind us.

(<http://waringis.com/archives17/>)

(13) Due to the fact that Christmas is coming up behind us I decided that this would be a great start for all those resellers!

(<http://www.webhostingtalk.com/archive/index.php/t-28863.html>)

(14) 1st semester is just about done, and 2nd semester is creeping up behind us. I think I'm ready to move on.

(blogs.aol.com/susie320/ThisismeNow)

(15) the myriad of ways we can prevent the heart attack or stroke that is always lurking over our shoulder.

(www.abigon.com/)

In all these examples, a future event or a possible future event is behind Ego. Note in particular sentence 14. Future events are often described as 'creeping up behind' especially if they are thought to be unpleasant.

Finally consider the following where Ego is approaching an event. Such instances are usually claimed to involve Ego moving forward.

(16) Pundits and everyday Joes sounded all sorts of Cassandra cries that we were walking backwards into a socialist state.

(www.care2.com/.../socialist-propaganda-to-benefit-librarians-and-the-libraries-that-recruit-them.html)

(17) All this was intended to communicate the message that our people, our country and our movement are walking backwards into a new Age of Darkness!

(www.southafricanemb.se/arkiv/presletarc133.htm)

In sentence 18, Ego may be walking forward or not, but importantly he/she cannot see where he/she is going.

- (18) If we don't do it now then we are simply *blindly walking into* an ever more totalitarian controlled, socially and economically stratified,...
(www.guardian.co.uk/business/.../executive-pay-keeps-rising)

Finally, example sentence 19, where Christmas is 'far off' but in an unspecified direction.

- (19) But Christmas is still far off, and what's on the mind of most Canadians is ...
(thegauntlet.ca/search.php?Start=4170andQuantity...)

So how should these results be analysed? As noted at the start of the section, a distinction can be made between knowing of a date and knowing of an event or what will happen on that date. And with some events, one's knowledge of what will happen and how the event relates to other events is much less certain than with others. For example, I have already noted that my knowledge of what I shall be doing at Easter are still somewhat uncertain, although I do have partial knowledge.

At first blush, the examples of an event being 'round the corner' and the examples 12 - 19 all seem to involve a (potential) future event that Ego is aware of but doesn't know much about, hasn't made many plans for, or doesn't have certain knowledge of. In the more commonly discussed examples such as 'Christmas is ahead' or 'Christmas is coming', the uncertainty about the nature of Christmas seems to be less of an issue. These questions of certainty and planning are issues of modality.

I will now return to the question of Ego's relation with apparently future events. As noted earlier, the word epistemic comes from the Greek for knowledge. As with the metaphors discussed in section 3 concerning the degree of certain knowledge on has of ideas, I assume two common metaphors for knowledge. MENTAL ANALYSIS IS MANIPULATION and KNOWING AS SEEING. In Wallington 2010, these are both seen as special cases of a more general metaphorical extension in which knowing or learning about something through one's senses metaphorically stands in for knowing or learning about something in general.

In addition, I shall assume that in metaphor, events too are often reified as physical objects. "This year Christmas hit me like a bus side swiping a little smart car" (<http://tinyurl.com/6z3fg9>). Indeed, in the case of events and objects there seems to be much conceptual structuring that is shared. Thus Dowty (1979) noted the parallels between count and mass nouns and telic and atelic events (see also, Talmy, 2000: ch. 1). The sentence "Chapman drank beer for an hour" involves a mass noun, and as can be seen by the use of 'for an hour' is also atelic. If the prepositional phrase had been replaced by 'in an hour', the sentence would have been unacceptable; a standard test for distinguishing telic and atelic sentences. On the other hand, if a count noun were used, the sentence would be telic, as the following contrast shows:

- (20) Chapman drank two pints of beer (#for an hour/in an hour)

Physical objects exist in physical space and may be movable. They can potentially be seen and/or manipulated by Ego. I also assume that the location of Ego corresponds to 'now'. The most direct way in which they can be manipulated is if they are actually co-located with Ego at 'now' rather than some distance away. If they are approaching Ego, then there is a high degree of likelihood that they will at some point be manipulated by Ego, but certain knowledge of the event/object cannot be known until the object is co-located with Ego at 'now'.

Objects around a corner from Ego or behind Ego will not be seen, but may nonetheless be known to exist in some form. Similar points apply if one is walking backwards or blindly towards an event/object. On the other hand, if one has full view of an event/object, if one is 'face-to-face with the future, then I would argue that the issue of one's epistemic detachment from the event is not something that is expected to be inferred from the use of the metaphor. However if an event is stated to be 'far off' as in sentence 19, then one can infer that one does not have direct mental awareness of the event -a somewhat similar analysis to that of 7.

Finally, events/objects that are 'coming up behind' Ego, especially if they are creeping up, may well suggest an emotional state of fear or worry in the person behind whom the event is located.

Between them, I would claim that these metaphors for knowledge, the reification of events as movable physical objects plus the general tendency for metaphors to be extended by allowing information concerning the degree to which something holds, information concerning its certainty and/or information about the emotional state induced by the arrival of an event, can account for the seeming use of a landscape to locate future events.

A final comment can be made. I have concentrated on the future in this paper. But past events are not confined to positions behind Ego. Past events are often described as 'disappearing over the horizon' as our memory of them fades. This is exactly the location, of course, of future events, 'just over the horizon', casting further doubt on any claim of a direct correspondence between spatial positions and time.

Notes

- i This work was partly supported by EPSRC grant EP/C538943/1. I wish to thank John Barnden and Sheila Glasbey for many useful discussions about time and metaphor.
- ii There is an ambiguity in the use of the term time. It can either refer to the actual polysemous word or lexical concept 'time' as in: 'it lasted a long time'; 'the time for a decision has arrived'; 'the third time in a row'; 'full time' and still further uses (cf. Evans 2004). However, the term can also be used to refer to temporal concepts such

- as 'Christmas', '5:47 am'; 'yesterday'. In this paper, I shall assume this latter, broader, use.
- iii A recent trend has been to examine temporal reference points from the perspective of Levinson's (2003) reference points for space (c.f. Zinken 2010, Tenbrink 2011). The claim of this paper is that the relation between time and space is only indirect.
 - iv Bybee et al (1994) argue that across languages, future tense markers evolve out of verbs for motion and verbs for volition. This paper argues that space and motion through space allow the degree of epistemic detachment of an individual from an event to be determined. This, like volition, can be understood as a modal concept and so it suggests why volition and motion might give rise to 'future' tense markers.
 - v Note that the time-reference point metaphors used to describe sequences of events such as 'Hogmanay follows Christmas' also apply to clock and calendar times that have no necessary connection to a specific event such as 5.17am follows 5.16am. See Section 4. They also apply to non-temporal objects, as in '4 follows 3' or 'blue comes after green'. Consequently, such metaphors are not directly about time as such. I am arguing here for a similar conclusion for the spatio-kinetic, ego-reference point, metaphors, albeit for different reasons. They are not directly about time, but use space to describe degrees of epistemic detachment of Ego from an event.

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