

## A modal account of the English present perfect puzzle

In this paper the incompatibility of the English present perfect with past adverbials, Klein's (1992) present perfect puzzle (1), is shown to follow directly from certain temporal/modal presuppositions associated with the English perfect.

(1) \*Uli has been to the exhibit last week.

While the modal nature of the perfect has been recognized (Izvovsky 1997; Portner 2000), typically accounts of (1) are based on the temporal or morphosyntactic nature of the English perfect construction (Klein 1992, Musan 1998, Giorgi and Pianesi 1997). In this paper I will show how the apparent Extended-Now-type meaning for the perfect (McCoard 1978, Dowty 1982, Stechow 1999) is in fact a reflection of its underlying temporal/modal presuppositions.

McCawley (1973) observed that the English present perfect is contrasted with the simple past in examples like (2) and (3).

(2) a. Has Mary been to the exhibit?      b. Did Mary go to the exhibit?

(3) a. Mary hasn't been to the exhibit.      b. Mary didn't go to exhibit.

Unlike (2a) and (3a), (2b) and (3b) can felicitously be uttered after the exhibit is permanently closed. This is clearly not true of (2a) and (3b). The central claim of the paper is that the infelicity of (2a) and (3a) in such a context is due to a presupposition associated with the English present perfect and that this same presupposition accounts for the oddness of (1).

The presupposition at issue concerns the interval of time at which it is possible for the event described to occur. An utterance of a present perfect sentence appears to presuppose that there is a temporal interval that includes the time of utterance and for every subinterval of that interval it is possible for the event to occur. In (2) and (3), this means that the perfect sentences are felicitous when uttered at a time included in an interval at which it is possible to go to the exhibit, i.e. at a time while the exhibit is running. This presupposition is, on any standard analysis of temporal adverbials (Dowty 1982, Parsons 1990), incompatible with non-present temporal adverbials such as *last week*.

To be explicit, we define the (context sensitive) modal operator  $\diamond$  for epistemic possibility in the style of Stalnaker (1986) and the format of Heim and Kratzer (1998).

$$[[\diamond]]^{g,c} = \lambda p \in D_{\langle s,t \rangle}. \text{ there is a } w \in W \text{ in the common ground of } c \text{ for which } p(w) = 1$$

Temporal adverbs such as *this week* and *last week* are, standardly, taken to locate events in time (Parsons 1990, Vlach 1993). A simple interval-type analysis of *last week* serves for illustration: (Dowty 1979).

$$[[\text{last week}]]^{g,c} = \lambda P \in D_{\langle i, \langle s,t \rangle \rangle}. \lambda t \in D_i. \lambda w \in W. t \text{ is on the week before the week of } c \text{ and } P(t)(w) = 1$$

The sentence  $\diamond$ *Uli to go the exhibit this week* is true of all moments of time this week at which it was thought to be possible for Uli to go to the exhibit and the sentence  $\diamond$ *Uli to go the exhibit last week* is true of all moments of time last week at which it was thought to be possible for Uli to go to the exhibit.

When uttered, (1) presupposes that there is an interval of time which contains the time of speech throughout which it is possible for Uli to go to the exhibit last week. To put it another way, the presupposition is that there is an interval which includes the time of speech and all of whose subintervals are located on the week before the time of speech (and for which it is possible for Uli to go to the exhibit). It is clear that there can be no such interval, of course. The

presupposition of the present perfect only satisfied when the adverbial does picks out a time that overlaps the time of speech:

(5) Uli has gone to the exhibit this week.

The analysis is made precise in a fairly standard system of tense and aspect, the details are derived from Heim (1994) and Stechow (1999) and ultimately Dowty (1979). The present perfect is taken to be an operator that takes a temporal predicate and returns a proposition. Expressed in the style of Heim and Kratzer (1998) the semantics of the present perfect is:

$$[[\text{PRES-PERF}]]^{g,c} = \lambda P \in D_{\langle i, \langle s, t \rangle \rangle}. \exists t_R \in D_i \text{ such that time of } c \text{ is in } t_R \forall t' \in D_i \\ [t' \subset t_R \rightarrow \diamond P(t')] . \lambda w \in W. \text{ there is a } t_E \in D_i \text{ that is in } t_R \text{ and before the time of } \\ c \text{ such that } P(t)(w) = 1$$

While presupposition is that the event might occur at any time in the given interval, the assertion is that the event actually occurred within this interval and before the time of speech.

This presuppositional treatment of the present perfect is appealing in that it may also account for the “present relevance” and “hot news” interpretations of the present perfect:

(4) a. Bush has been killed!      b. ??Lincoln has been killed! (cf. Lincoln was killed.)

The presuppositional account predicts that, until it is common knowledge that Bush is dead, the utterance of the (4a) should remain felicitous.

The analysis, of course, predicts a correlation between modal presupposition and the present-perfect-puzzle like restriction on the temporal modifiers. This prediction appears to be born out, both within the language and cross-linguistically. In those cases where the past perfect exhibits the modal presupposition, it also shows an effect analogous to the present perfect effect. And, most interestingly, the modal presuppositions discussed here are only evident in English-type languages for which the present perfect effect holds. There are no modal presupposition associated with the use of the perfect for German or Italian-type languages which do not have the present perfect effect (Giorgi and Pianesi 1997).

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