

Local vs. Global Maximize Presupposition and the Temporal Duration Parameter

Elaine Stranahan (Harvard University)

Background. Sauerland (2002) observes an asymmetry between the past and present tenses in English: while past-tense sentences about non-past intervals are infelicitous, some present-tense sentences about non-present intervals are not:

- (1) Every Tuesday this month, I fast/#fasted. (Uttered in the middle of the month) (Sauerland, 2002; p. 12)

Such data suggest an asymmetric semantics of tense in which the present tense is “vacuous” (Sauerland, 2002), i.e. imposes no restrictions at all on the interval denoted.

However, Mittwoch (2008) notes that in certain cases the present tense is incompatible with mixed present and non-present subjects:

- (2) This house was built for John Stevens, the actor, who died last year. The one over there belonged to his brother, Bill Stevens, the property tycoon; he now lives in America. They #are/#were both very handsome. (Mittwoch, 2008; p. 175)

Crucially, semantic type seems to correlate with degree of infelicity: the more individual-like the subject, the greater the infelicity; the more interval-like the subject, the lesser the infelicity:

- (3) My previous class and my current class ?are/#were in Room 108.
(4) 2012 and 2016 are/#were leap years.
(5) Every Tuesday this month is/#was a holiday. (Uttered in the middle of the month)

In cases where subjects are animate, infelicity is partly due to contradiction between an obligatory lifetime inference and the listener’s knowledge:

- (6) Marilyn Monroe #is/was blonde.

Lifetime inferences are implicatures about the current existence of the subject derived via a Gricean quantity principle from sentences involving i-level predicates (Carlson, 1977; Chierchia, 1995; Kratzer, 1995); typically, a listener may conclude from such a sentence that a subject is alive or dead based on the speaker’s choice of tense (Musan, 1997).

Meanwhile, a quantity-oriented pragmatic principle for presuppositions has been formalized (Heim, 1991; Sauerland, 2008; Singh, 2011; Percus, 2006; Chemla, 2008) as Maximize Presupposition (MP), a listener-directed interpretation principle stating that when two contextually-equivalent LFs compete, the one with the strongest presuppositions must be chosen. While some formulations of MP construe it as a root operator, Singh (2011) shows that MP must sometimes be checked in local contexts.

Analysis. I argue that in sentences whose subjects are conjoined or quantified DPs with mixed past and non-past referents, the present tense is felicitous when MP has global scope (examples (1), (4), (5), and (7)) and infelicitous when it has local scope (examples (2) and (8)):

- (7) a. Every Tuesday this month is/#was a holiday. (Uttered in the middle of the month)

b. $\mathbf{MP}([\text{Every Tuesday this month}]_i (t_i \text{ be}+T \text{ a holiday})) \equiv \mathbf{MP}(\text{Tuesday before last be}+T \text{ a holiday} \ \& \ \text{last Tuesday be}+T \text{ a holiday} \ \& \ \text{this Tuesday be}+T \text{ a holiday} \ \& \ \text{next Tuesday be}+T \text{ a holiday}), \text{ where } T \text{ is a single tense morpheme which must satisfy MP}$

- (8) a. Every Kennedy #is/#was a politician.

b. $[\text{Every Kennedy}]_i \mathbf{MP}(t_i \text{ be}+T \text{ a politician}) \equiv \mathbf{MP}(\text{JFK be}+T \text{ a politician}) \ \& \ \mathbf{MP}(\text{RFK be}+T \text{ a politician}) \ \& \ \mathbf{MP}(\text{Joe Kennedy be}+T \text{ a politician}) \ \& \ \dots, \text{ where } T \text{ is a single tense morpheme which must satisfy all MPs}$

In (7), MP is checked only once, and T must make the maximal presupposition satisfied by the conjunction of the intervals in the domain of quantification (*Tuesday before last + last Tuesday + this Tuesday + next Tuesday*). (I presume but do not offer here an account of interval conjunction.) Since the conjoined interval does not satisfy the stronger presupposition of the past tense, only the present is felicitous. On the other hand, presupposition in (8) is maximized one referent at a time, and since the lifetime of each Kennedy satisfies a different maximal presupposition, no single value of T satisfies all MPs, and neither the past nor the present tense morpheme is felicitous.

I propose that MP is checked locally when subjects are individuals and globally when they are intervals. I argue that this is due to the fact that while intervals are fully-specified for existence time (by definition, an interval is its own existence time), individuals are underspecified and thus epistemically enrichable. Let us represent the existence time associated with an individual as a subscripted interval label, what I will call the “temporal duration parameter”:

- (9) $[[\text{Mary}]] = m_{t_1}, [[\text{Joe}]] = j_{t_2}$

I use a variable with an unvalued temporal duration parameter to indicate a representation of an individual which does not include information about its existence time. While the breadth and systematicity of factors influencing the valuation of temporal duration parameters are not addressed here, I argue that listeners readily incorporate information from discourse, in particular, contextually-derived restrictions on intervals, in order to temporally enrich their representations of individuals:

- (10) a. Listener: $[[\text{Mildred Manning}]] = m_{\tau}$
b. Speaker: “Many nurses served in WWII. Mildred Manning...”
c. Listener: $[[\text{Mildred Manning}]] = m_{t=a \text{ 50-80-year interval containing WWII}}$

Furthermore, lifetime inference is a robust way for the temporal duration parameter to acquire a value. When the speaker knows more about the existence time of an individual than the listener does, the listener may derive restrictions on the temporal duration parameter from implicatures calculated via lifetime inference (Musan, 1997):

- (11) a. Listener: $\llbracket \text{Betty White} \rrbracket = b?$
 b. Speaker: “Betty White is blonde.”
 c. Listener: Assuming the speaker is being maximally informative, if the speaker believed that Betty White was dead, he or she would have used the past tense, therefore the speaker must not believe that Betty White is dead; taking the speaker to be reliable, the listener enriches his or her representation of Betty White to include a restriction on her temporal duration parameter, namely, that it must include the present.
 d. Listener: $\llbracket \text{Betty White} \rrbracket = b_{t \supseteq t_0}$

Crucially, interpretations involving modification (resulting in increased specificity) of a temporal duration parameter are logically stronger (more informative) than interpretations in which the parameter remains unchanged. The Strongest Meaning Hypothesis (SMH) has been proposed to account for data suggesting that when a listener can assign a sentence more than one LF, the one with the logically strongest meaning must be assigned (Chierchia, et al., 2008; Dalrymple, et al., 1998; Winter, 2001). Along with the hypothesis that the default position of MP is at the root and a principle of “laziness” (e.g., don’t move something if you don’t have to), SMH can account for the asymmetrical behavior of the present tense with respect to individual and interval subjects.

To illustrate, consider the two LFs compatible with (12), which differ with respect to the amount of new information each interpretation provides about the lifetimes of the subjects:

- (12) “Every Sheen is an actor.”
 a. LF 1: $\mathbf{MP}(\llbracket \text{Every Sheen} \rrbracket_i (t_i \text{ is an actor}))$

i. Expansion: $\mathbf{MP}(\text{Charlie Sheen is an actor} \ \& \ \text{Martin Sheen is an actor} \ \& \ \dots)$

ii. Implicature: Based on his or her beliefs, the speaker must be unable to presuppose that the conjunction of all the Sheens’ existence times is in the past; this must be because, for at least one and possibly all Sheens, the speaker believes that Sheen is alive. Thus the listener can conclude that at least one Sheen is alive, but since the he or she doesn’t know which one(s), no Sheen’s temporal duration parameter is modified.

- b. LF 2: $\llbracket \text{Every Sheen} \rrbracket_i \mathbf{MP}(t_i \text{ is an actor})$

i. Expansion: $\mathbf{MP}(\text{Charlie Sheen is an actor}) \ \& \ \mathbf{MP}(\text{Martin Sheen is an actor}) \ \& \ \dots$

ii. Implicature: For each Sheen, the strongest presupposition the speaker can make on his lifetime given his or her beliefs must be no presupposition at all; therefore, for each Sheen, the presupposition of the past tense must be inconsistent with the speaker’s beliefs about that Sheen, so the speaker must believe that Sheen is alive. Therefore, every Sheen’s temporal duration parameter can be modified with the restriction that it must include the present.

Since individuals by stipulation always come with mutable temporal duration parameters, local MP LFs of sentences with individual subjects like LF 2, which result in multiple temporal duration parameter valuations, will always be more informative than global MP LFs like LF 1, which result in no parameter valuations at all, and the SMH will always prefer them. Because local MP results in the same lifetime inference and thus the same modification to each subject referent’s temporal duration parameter, subjects with mixed past and non-past individual referents can be felicitous with neither past nor present tense i-level predicates. On the other hand, since intervals cannot be informationally enriched by tense presuppositions, both the local and global MP LFs of a sentence with interval subjects are equally informative. Since the SMH thus cannot distinguish between the two, MP is always interpreted in its default position at the root in sentences with interval subjects. Because the only implicature licensed is therefore that the conjunction of the intervals denoted by the subject does not satisfy the presupposition of the past tense, the present tense can be felicitously used to describe groups of mixed past and non-past intervals.

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