Lifetime effects as presuppositional scalar strengthening

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When combined with past tense, a predicate like *be British* gives rise to an inference that the subject of the predicate is dead (‘Lifetime Effects’; LEs) (Musan 1995, 1997 Magri 2009, Thomas 2012, a.o.). This is illustrated by (1a) and (1b), where only the former suggests that John is dead.

(1) a. John was British.
   b. John is British.

Not all predicates give rise to LEs. Generally, only those predicates that hold throughout one’s life-time do. For instance, a predicate like *be ill* in (2a) does not suggest that John is dead. In certain cases, LEs do not arise for (1a) either, as shown in (3). Crucially, however, *be British* is understood here as not necessarily holding throughout one’s life-time.

(3) John was British, but he became an American when he was 18.

Previous studies analyze LEs as arising from the interaction between scalar implicatures and discourse felicity (Musan 1995, 1997, Magri 2009, Thomas 2012). We propose an alternative presuppositional analysis based on recent work by Spector & Sudo (2016; henceforth S&S) and we argue that it makes better predictions than the scalar implicature approach.

Background assumptions: Following the previous authors, we assume that past- and present-tense pairs like (1a) and (1b) are scalar alternatives. In addition, we adopt S&S’s scalar strengthening mechanisms:

(4) a. **Presuppositional scalar strengthening:** If $S$ and $S'$ are scalar alternatives, and if the presupposition of $S'$ is stronger than the presupposition of $S$, the use of presuppositionally strengthened $S$ is infelicitous in a context where the presupposition of $S'$ is satisfied.

b. **Assertive scalar strengthening:** If $S$ and $S'$ are scalar alternatives, and if the assertion of $S'$ is stronger than the assertion of $S$, then assertively strengthened $S$ presupposes whatever $S$ and $S'$ presuppose and asserts that $S$ is true and $S'$ is false.

Note that (4a) is similar to ‘Maximize Presupposition!’ (Heim 1991), except that it does not require $S$ and $S'$ to be contextually equivalent (see S&S for empirical motivation), which will be crucial for our account of LEs. (4b), on the other hand, is reminiscent of the mechanism of scalar implicature computation, except that it also makes reference to the presuppositions of alternatives. Specifically, it requires that the presuppositions of the negated alternatives be inherited by the strengthened sentence. Following S&S, we assume that whenever there are scalar alternatives, either of these operations need to apply.

Presuppositional analysis of LEs: It is reasonable to assume that predicates like *be British* and *be ill* presuppose that the subject is alive (or for inanimate subjects, that it exists) at the time interval under discussion (Musan 1995, 1997, Thomas 2012). For instance, (1a) is infelicitous for past time intervals when John was not alive. As expected, this inference survives under various types of embedding, just like canonical presuppositions (see Thomas 2012).

We claim that the LEs of (1a) arise due to the stronger presupposition of (1b) via the presuppositional scalar strengthening. Specifically, we assume an existential semantics for tense (Kusumoto 1999, Thomas 2012) as in (5). Time intervals are assumed to be convex sets of moments, ‘$<$’ is the precedence relation among time intervals, and $\text{time}(c)$ is the current moment of utterance.

(5) $\llbracket \text{PAST} \rrbracket^c = \lambda P_{(i,j)} \exists t [t < \text{time}(c) \land P(t)]$

$\llbracket \text{PRES} \rrbracket^c = \lambda P_{(j)} \exists [\text{time}(c) \in t \land P(t)]$

Given that we are assuming that tense is an existential quantifier, the presupposition about time intervals is expected to existentially project (Beaver 2001, Chemla 2009, Sudo 2012 a.o.):

(6) a. $\llbracket (1a) \rrbracket^c \neq \# \text{iff } \exists t [t < \text{time}(c) \land \text{alive}(j)(t)]$
We claim that the presupposition of (1a) is weaker than the presupposition of (1b). Specifically, we adopt Altschuler & Schwarzschild’s (2012) analysis of stative predicates in which a predicate like \textit{alive} never holds for a single moment alone, i.e. for any moment $m_2$, if $\text{alive}(j)(\{m_2\})$ is true, then there is $m_1$ such that $\{m_1\} < \{m_2\}$ and $\text{alive}(j)(\{m_1\})$ is true (NB: this does not imply that John was alive at every past moment, because there are uncountably many moments).

Suppose now that $\llbracket(1b)\rrbracket^c \neq \#$. Because John is alive at $\{\text{time}(c)\}$, there is a past moment $m$ such that $\text{alive}(j)(\{m\})$ is the case, from which it follows that $\llbracket(1a)\rrbracket^c \neq \#$. On the other hand, when $\llbracket(1a)\rrbracket^c \neq \#$, $\llbracket(1b)\rrbracket^c \neq \#$ might or might not hold, depending on whether John is alive now. Given this asymmetry in the presupposition, the presuppositionally strengthened version of (1a) becomes infelicitous in contexts where the presupposition of (1b) is satisfied. Conversely, (1a) is only felicitous in contexts where the presupposition of its alternative (1b) is not satisfied, i.e. it is not commonly known that John is still alive, $\neg CK(\exists \text{time}(c) \in t \land \text{alive}(j)(t))$. We follow Chemla (2008) in assuming that it can be pragmatically strengthened to $CK(\neg \exists \text{time}(c) \in t \land \text{alive}(j)(t))$. This is how the LEs of (1a) arises.

This analysis also predicts that (2a) should also exhibit LEs. This is not a problem, because the mechanism of assertive strengthening (4b) could be used instead, in which case, (2a) would presuppose that John is alive now and asserts that John is not ill anymore. So our account predicts that (2a) is ambiguous, and LEs do not consistently follow. For (1a), on the other hand, (4b) would generate the presupposition that John is alive and the additional assertion that he is not British anymore. When one’s nationality is assumed to be constant, this would be trivially false, and the other reading with LEs generated with (4a) becomes prominent. When no such assumption is made, the strengthened assertion can be used, as in (3). Finally, (1b) and (2b) have no scalar inferences, as both strengthening mechanisms are vacuous for them due to the lack of stronger alternatives.

\textbf{Domain restriction:} It is known that LEs fail to arise in some contexts where a particular past time is salient, e.g. Musan (1995: 19). To accommodate such examples, we assume that $\exists t$ in (5) has a domain restriction (Kusumoto 1999, Altschuler & Schwarzschild 2012, Thomas 2012), and the restriction stays constant across alternatives. If the domain excludes the current time, then the presupposition of the present tense counterpart becomes trivially false, trivially blocking LEs.

\textbf{Comparison with previous studies:} Our presuppositional analysis straightforwardly accounts for the projective behavior of LEs, e.g. (7) all suggest that John is dead.

\begin{enumerate}
\item It’s not the case that John was British
\item Was John British?
\item If John was British, Mary must have met him.
\end{enumerate}

These projection patterns are problematic for Musan (1995,1997), although not necessarily for Magri (2009) and Thomas (2012). An advantage of our analysis over Magri’s and Thomas’s is our account of LEs in ignorance contexts. Thomas (2012) observes that LEs arise even in contexts in which the speaker asserts ignorance about whether John is dead, giving rise to infelicity, as in (8).

\begin{enumerate}
\item I don’t know whether John is dead or alive, ??but if he was British, Mary must have met him.
\end{enumerate}

This is straightforwardly accounted for in our analysis, while it is not obvious why (8) is infelicitous under Magri’s and Thomas’s analyses. Thomas proposes a pragmatic explanation for why the hearer would infer that the speaker knows whether John is dead or alive, but it is not clear why such an inference should be drawn, especially when the speaker asserts that she is ignorant about it, as in (8). Finally, we observe that LEs arise even when an individual-predicate is conjoined with a stage-level predicate, as in (9). We straightforwardly predict the LEs here, as presuppositions project out, while Magri’s and Thomas’s analyses predict no inference (cf. Magri 2013).

\begin{enumerate}
\item He was British and drunk.
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References


