Against expletive negation in Spanish \textit{hasta}-clauses
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Spanish sentences (1a)-(2a) have traditionally been treated as identical in meaning to (1b)-(2b), respectively. The latter have been described as containing an ‘expletive’ negation in the \textit{hasta}-clause, ‘until’, i.e. a vacuous negation that does not change the meaning of the sentence (Van der Wouden 1994; Espinal 2000). I show that the negation in the \textit{hasta}-clause does contribute to the meaning calculation. The novelty of my proposal is the comparison of the aspect (specifically, the durativity component) of the eventualities expressed in the \textit{hasta}-clause, which supports the claim that the truth conditions for each pair of sentences are similar but not identical.

(1) a. Ana no se irá hasta que María llegue a casa
Ana NEG CL will.go until that Maria arrives.SUBJ to house
‘Ana won’t leave until Maria arrives home’

b. Ana no se irá hasta que María no llegue a casa
Ana NEG CL will.go until that Maria NEG arrives.SUBJ to house
‘Ana won’t leave until Maria arrives home’

(2) a. Ana no se irá hasta que María cante el himno nacional
Ana NEG CL will.go until that Maria sings.SUBJ the anthem national
‘Ana won’t leave until Maria sings the national anthem’

b. Ana no se irá hasta que María no cante el himno nacional
Ana NEG CL will.go until that Maria NEG sings.SUBJ the anthem national
‘Ana won’t leave until Maria sings the national anthem’

The \textit{hasta}-clause in (1)-(2) is interpreted as punctual: it does not express the length of a durative eventuality but locates punctual eventualities in time (Karttunen 1974; Giannakidou 2002; Condoravdi 2002). Punctual \textit{hasta}-clauses trigger a factivity inference: The sentences in (1)-(2) are inconsistent with Ana not leaving at all, and the time expressed in the \textit{hasta}-clause is at the very beginning of the stretch in which the eventuality in the main clause (i.e. Ana’s leaving) is expected to hold. The assertion, factivity inference and scalar interpretation for (1a)-(2a) are as follows:

(3) \textbf{Achievement in the \textit{hasta}-clause}
If Maria arrives home at \(t\), then for (1a):
\begin{itemize}
  \item a. Assertion: \hspace{1cm} Ana won’t leave before \(t\)
  \item b. Factivity inference: \hspace{1cm} Ana will leave during the interval starting at \(t\)
  \item c. Scalar interpretation: \hspace{1cm} Ana will leave at \(t\) or shortly thereafter
\end{itemize}

(4) \textbf{Accomplishment in the \textit{hasta}-clause}
If Maria sings the national anthem from \(t_1\) to \(t_2\), then for (2a):
\begin{itemize}
  \item a. Assertion: \hspace{1cm} Ana won’t leave before \(t_1\)
  \item b. Factivity inference: \hspace{1cm} Ana will leave during the interval starting at \(t_1\)
  \item c. Scalar interpretation: \hspace{1cm} Ana will leave during the interval starting at \(t_1\) and ending at \(t_2\) or shortly thereafter
\end{itemize}

A formalization appears in (5). \(P\) and \(Q\) are the predicates in the main clause and in the \textit{hasta}-clause, respectively; \(t\) is a variable for a time interval, and \(t’\) for a contextually-determined interval; \(<\) express ‘precedes’, and \(\tau(e)\) is the temporal trace of the eventuality \(e\).

(5) \textbf{Semantics for sentences with punctual \textit{hasta}-clauses}
\begin{itemize}
  \item a. Assertion: \hspace{1cm} \(\exists t \exists e [Q(t) \land P(e) \land \neg \exists t’ [t’<t \land \tau(e)(t’)]]\)
  \item b. Factivity inference: \hspace{1cm} \(\exists t \exists e [Q(t) \land P(e) \land \exists t’ [t’<t \land \tau(e)(t’)]]\)
  \item c. Scalar interpretation: \hspace{1cm} \(\exists t \exists e [Q(t) \land P(e) \land \exists t’ [t’<t \land \tau(e)(t’)]]\)
\end{itemize}
Consider the following context: Ana wants to leave when Maria starts singing the national anthem or during the first verses at most. In this context, (2a) is true, but (2b) is false. This is so because by uttering (2b) the speaker expresses that Ana will make sure Maria sings the whole national anthem and she will leave once Maria finishes the accomplishment. This suggests that the ‘expletive’ negation is actually playing a role: it negates that the eventuality in the main clause holds during the interval denoted in the hasta-clause, and restricts the factivity inference to the complement of that interval. The result is that the eventuality in the main clause is expected to hold after the eventuality in the hasta-clause is finished, i.e. for (2b), once the duration of the accomplishment is over, as shown in (7). This effect is not so evident in (1b), as illustrated in (6), where the lack of durativity of the achievement in the hasta-clause and its extremely fine level of granularity (Krifka 1998) creates the illusion of expletiveness.

(6) \textbf{Achievement + ‘expletive’ negation in the hasta-clause}
If Maria arrives home at \( t \), then for (1b):
\begin{itemize}
  \item a. Assertion: Ana won’t leave before \( t \)
  \item b. ‘Expletive’ negation’s role: Ana won’t leave at \( t \)
  \item c. Factivity inference: Ana will leave during the interval starting right after \( t \)
  \item d. Scalar interpretation: Ana will leave right after \( t \) or shortly thereafter
\end{itemize}

(7) \textbf{Accomplishment + ‘expletive’ negation in the hasta-clause}
If Maria sings the national anthem from \( t_1 \) to \( t_2 \), then for (2b):
\begin{itemize}
  \item a. Assertion: Ana won’t leave before \( t_1 \)
  \item b. ‘Expletive’ negation’s role: Ana won’t leave during the interval starting at \( t_1 \) and ending at \( t_2 \)
  \item c. Factivity inference: Ana will leave during the interval starting right after \( t_2 \)
  \item d. Scalar interpretation: Ana will leave right after \( t_2 \) or shortly thereafter
\end{itemize}

A formalization is proposed in (8) (the contribution of the ‘expletive’ negation is underlined in (8a); \( \prec_1 \) means ‘immediately precedes’):

(8) \textbf{Semantics for sentences with punctual hasta-clauses + ‘expletive’ negation}
\begin{itemize}
  \item a. Assertion + ‘expletive’ negation: \[ \exists t \exists e \left[ Q(t) \land P(e) \land \neg \exists t' [t' \prec_1 t \land \tau(e)(t')] \land \neg \tau(e)(t) \right] \]
\hspace{1cm} = \[ \exists t \exists e \left[ Q(t) \land P(e) \land \exists t' [t' \prec_1 t \land \tau(e)(t')] \right] \]
  \item b. Factivity inference: \[ \exists t \exists e \left[ Q(t) \land P(e) \land \exists t' [t \prec_1 t' \land \tau(e)(t')] \right] \]
  \item c. Scalar interpretation: \[ \exists t \exists e \left[ Q(t) \land P(e) \land \exists t' [t \prec_1 t' \land \tau(e)(t')] \right] \]
\end{itemize}

I further argue that the so-called ‘expletive’ negation is licensed in the punctual hasta-clause because it is sensitive to the change of state expressed by punctual hasta (its factivity inference). Similarly, the ‘expletive’ negation does play a role in the delimitation of the interval expressed in temporal adverbial clauses in other languages (e.g. German bevor-clauses ‘before’ (Krifka 2010), Korean –ci-clauses ‘since’ (Yoon 2011), a.o.).

I have shown that the so-called ‘expletive’ negation in Spanish hasta-clauses does contribute to the meaning of the sentence. The assertion of a sentence with ‘expletive’ negation in the hasta-clause (8a) entails the one of a sentence without it (5a), but not inversely. Consequently, their truth conditions are not identical.

\textbf{References.}
\begin{itemize}
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