Against expletive negation
The case of Spanish *hasta*-clauses

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Expletive negation in the *hasta*-clause (‘until’)

(1)  **Hasta-clause without negation**
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’

(2)  **Hasta-clause with expletive negation**
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’
Against expletive negation

• I show that the negation in the hasta-clause does in fact contribute to the meaning of the sentence

• The novelty of my proposal is the comparison of the aspect (specifically, the durativity component) of the eventualities expressed in the hasta-clause.

• As a result, the truth conditions for a sentence containing ‘expletive’ negation and for a sentence without it are not identical.
Roadmap

• Durative vs. Punctual *hasta*-clauses
  • The semantics of punctual *hasta*-clauses
• ‘Expletive’ negation in punctual *hasta*-clauses
  • The role of ‘expletive’ negation
• Comparison between punctual *hasta*-clauses with and without ‘expletive’ negation
• Discussion and further issues
Durative vs. Punctual *hasta*-clauses

- While the *hasta*-clause in (3) expresses the length of a durative eventuality, the *hasta*-clause in (1) does not express the length of a durative eventuality but locates punctual eventualities in time (Karttunen 1974; Giannakidou 2002; Condoravdi 2002).

(3) **Durative *hasta*-clause**
Ana estará triste [hasta que María cante el himno nacional]
Ana will be sad until that Maria sings.SUBJ the anthem national
‘Ana will be sad until Maria sings the national anthem’

(1) **Punctual *hasta*-clause**
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’
Punctual *hasta*-clauses

- Punctual *hasta*-clauses trigger a **factivity inference**:
  - The sentence in (1) is inconsistent with Ana not leaving at all.
  - The time expressed in the *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.

- Punctual *hasta*-clauses trigger a **scalar meaning**:
  - The time expressed in the *hasta*-clause is interpreted as the time the eventuality in the main clause (i.e. Ana’s leaving) holds.

(1) Ana no se irá hasta que María cante el himno nacional

‘Ana won’t leave until Maria sings the national anthem’
Punctual *hasta*-clauses

1. Ana no se irá  **[hasta que María cante el himno nacional]**
   
   “Ana won’t leave until Maria sings the national anthem”

![Diagram](image)
Punctual *hasta*-clauses

(4) 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’

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**Assertion**

Ana won’t leave before $t_0$

**Factivity inference**

Ana will leave during the interval starting at $t_0$

**Scalar interpretation**

Ana will leave at $t_0$ or shortly thereafter
Punctual *hasta*-clauses

- A formalization follows:
  - $P$ and $Q$ are the predicates in the main clause and in the *hasta*-clause, respectively;
  - $t$ is a variable for a time interval, and $t'$ for a contextually-determined interval;
  - $\prec$ expresses ‘precedes’;
  - and $\tau(e)$ is the temporal trace of the eventuality $e$.

(5) **Semantics for sentences with punctual *hasta*-clauses**

a. Assertion: $\exists t \exists e \left[ Q(t) \land P(e) \land \neg \exists t'[t' \prec t \land \tau(e)(t')] \right]$

b. Factivity inference: $\exists t \exists e \left[ Q(t) \land P(e) \land \exists t'[t \approx t' \land \tau(e)(t')] \right]$

c. Scalar interpretation: $\exists t \exists e \left[ Q(t) \land P(e) \land \exists t'[t \approx t' \land \tau(e)(t')] \right]$
‘Expletive’ negation in punctual *hasta*-clauses

• 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, (1) is true, but (2) is false.

• By uttering (2) the speaker expresses that Ana will make sure Maria sings the *whole* national anthem and she will leave once Maria finishes the accomplishment.

1. **Accomplishment in the *hasta*-clause**

   Ana no se irá [hasta que María cante el himno nacional]

   ‘Ana won’t leave until Maria sings the national anthem’

2. **Accomplishment in the *hasta*-clause + ‘expletive’ negation**

   Ana no se irá [hasta que María no cante el himno nacional]

   ‘Ana won’t leave until Maria sings the national anthem’
The role of the ‘expletive’ negation

- 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.
The role of the ‘expletive’ negation

(2) 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’

Accomplishment in the hasta-clause

Maria sings the national anthem from $t_2$ to $t_2$

Assertion
Ana won’t leave before $t_0$

‘Expletive’ negation’s role
Ana won’t leave during the interval starting at $t_0$ and ending at $t_2$

Factivity inference
Ana will leave during the interval starting right after $t_2$

Scalar interpretation
Ana will leave during the interval starting right after $t_2$, or shortly thereafter
The role of the ‘expletive’ negation

- The effect of the presence of the ‘expletive’ negation in hasta-clauses containing an achievement is not so evident:
  - The lack of durativity of the achievement and its extremely fine level of granularity (Krifka 1998) creates an illusion of expletiveness.
The role of the ‘expletive’ negation

(6) 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’

Achievement in the hasta-clause

Maria arrives home at $t_0$

Assertion
Ana won’t leave before $t_0$

‘Expletive’ negation’s role
Ana won’t leave at $t_0$

Factivity inference
Ana will leave during the interval starting right after $t_0$

Scalar interpretation
Ana will leave right after $t_0$ or shortly thereafter
The role of the ‘expletive’ negation

• For a formalization, let us consider that:
  • \( P \) and \( Q \) are the predicates in the main clause and in the \( hasta \)-clause, respectively;
  • \( t \) is a variable for a time interval, and \( t' \) for a contextually-determined interval;
  • \( < \) expresses ‘precedes’; \( <_i \) expresses ‘immediately precedes’
  • and \( \tau(e) \) is the temporal trace of the eventuality \( e \).

(7) **Semantics for sentences with punctual \( hasta \)-clauses + ‘expletive’ negation**

a. Assertion + ‘expletive’ negation:
\[
\exists t \exists e \left[ Q(t) \land P(e) \land \neg \exists t' \left[ t' < t \land \tau(e)(t') \right] \right. \\
\left. \land \neg \left[ \tau(e)(t) \right] \right]
\]

\[
= \exists t \exists e \left[ Q(t) \land P(e) \land \neg \exists t' \left[ t' \preceq t \land \tau(e)(t') \right] \right]
\]

b. Factivity inference:
\[
\exists t \exists e \left[ Q(t) \land P(e) \land \exists t' \left[ t < t' \land \tau(e)(t') \right] \right]
\]

c. Scalar interpretation:
\[
\exists t \exists e \left[ Q(t) \land P(e) \land \exists t' \left[ t <_i t' \land \tau(e)(t') \right] \right]
\]
‘Expletive’ negation has narrow scope

- The ‘expletive’ negation in (7) has very narrow scope:
  - It only has scope over the temporal trace function.
- Evidence for this is that the ‘expletive’ negation reading is lost when a strong NPI needs to be licensed by negation.

(8) NPI: *(no) tener ni un centavo ‘(not) have a red cent’*

Ana no se irá [hasta que María *no* tenga ni un centavo]  
Ana NEG CL will.go until that Maria NEG has.SUBJ even a cent  
‘Ana won’t leave until Maria doesn’t have a red cent’
A comparison

5) **Semantics for sentences with punctual hasta-clauses**
   a. Assertion: \( \exists t \exists e [Q(t) \land P(e) \land \lnot \exists t'[t' < t \land \tau(e)(t')]] \)
   b. Factivity inference: \( \exists t \exists e [Q(t) \land P(e) \land \exists t'[t \leq t' \land \tau(e)(t')]] \)
   c. Scalar interpretation: \( \exists t \exists e [Q(t) \land P(e) \land \exists t'[t \approx t' \land \tau(e)(t')]] \)

7) **Semantics for sentences with punctual hasta-clauses + ‘expletive’ negation**
   a. Assertion + ‘expletive’ negation: \( \exists t \exists e [Q(t) \land P(e) \land \lnot \exists t'[t' < t \land \tau(e)(t')] \land \lnot [\tau(e)(t)]] \)
      \( = \exists t \exists e [Q(t) \land P(e) \land \lnot \exists t'[t' \leq t \land \tau(e)(t')]] \)
   b. Factivity inference: \( \exists t \exists e [Q(t) \land P(e) \land \exists t'[t < t' \land \tau(e)(t')]] \)
   c. Scalar interpretation: \( \exists t \exists e [Q(t) \land P(e) \land \exists t'[t < t' \land \tau(e)(t')]] \)
Where to go from here

• ‘Expletive’ negation is licensed in the punctual \textit{hasta}-clause because it is sensitive to the change of state expressed by punctual \textit{hasta} (its factivity inference).

• ‘Expletive’ negation does also play a role in the delimitation of the interval expressed in other temporal adverbial clauses different from \textit{until}-clauses:
  
  • \textit{Before}-clauses (e.g. German \textit{bevor}-clauses, Krifka 2010)
  
  • \textit{Since}-clauses (e.g. Korean –\textit{ci}-clauses, Yoon 2011)
What this tells us

• ‘Expletive negation’ seems to be a label to refer to a semantic phenomenon we haven’t been able to explain.

• A working hypothesis is that the ‘expletive’ negation’s role is to change the size of a domain of quantification by extracting parts of it.
  • In the case of *hasta*-clauses, this is expressed by aspect.
  • However, it may also be expressed by other means.

• The discussion can be inserted in the general Chomskyan program of Full Interpretation.
References


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