Against expletive negation in Spanish *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 *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 *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 *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]   — Achievement in the *hasta*-clause
 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]   — Achievement + 'expletive' negation in the *hasta*-clause
 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]   — Accomplishment in the *hasta*-clause
 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]   — Accomplishment + 'expletive' negation in the *hasta*-clause
 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 *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 *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 *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)   Achievement in the *hasta*-clause
  If Maria arrives home at t, then for (1a):
  a. Assertion: Ana won't leave before t
  b. Factivity inference: Ana will leave during the interval starting at t
  c. Scalar interpretation: Ana will leave at t or shortly thereafter

(4)   Accomplishment in the *hasta*-clause
  If Maria sings the national anthem from t_1 to t_2, then for (2a):
  a. Assertion: Ana won't leave before t_1
  b. Factivity inference: Ana will leave during the interval starting at t_1
  c. Scalar interpretation: Ana will leave during the interval starting at t_1 and ending at t_2 or shortly thereafter

A formalization appears in (5). *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; $\prec$ express 'precedes', and $\tau(e)$ is the temporal trace of the eventuality *e*.

(5) Semantics for sentences with punctual *hasta*-clauses
  a. Assertion: $\exists t\, \exists e\, [Q(t) \wedge P(e) \wedge \neg\exists t'\, [t' \prec t \wedge \tau(e)(t')]]$
  b. Factivity inference: $\exists t\, \exists e\, [Q(t) \wedge P(e) \wedge \exists t'\, [t \preccurlyeq t' \wedge \tau(e)(t')]]$
  c. Scalar interpretation: $\exists t\, \exists e\, [Q(t) \wedge P(e) \wedge \exists t'\, [t' \approx t \wedge \tau(e)(t')]]$

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)　　Achievement + 'expletive' negation in the *hasta*-clause
　　　　If Maria arrives home at t, then for (1b):
　　　　a. Assertion:　　　　　　　　Ana won't leave before t
　　　　b. 'Expletive' negation's role:　Ana won't leave at t
　　　　c. Factivity inference:　　　　Ana will leave during the interval starting right after t
　　　　d. Scalar interpretation:　　　Ana will leave right after t or shortly thereafter

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

A formalization is proposed in (8) (the contribution of the 'expletive' negation is underlined in (8a); $\prec_i$ means 'immediately precedes'):

(8)　　Semantics for sentences with punctual *hasta*-clauses + 'expletive' negation
　　　　a.　Assertion + 'expletive' negation:　　$\exists t \, \exists e \, [Q(t) \wedge P(e) \wedge \neg \exists t' \, [t' \prec t \wedge \tau(e)(t')] \wedge \underline{\neg[\tau(e)(t)]}]$
　　　　　　　　　　　　　　　　　　　　$= \exists t \, \exists e \, [Q(t) \wedge P(e) \wedge \neg \exists t' \, [t' \preccurlyeq t \wedge \tau(e)(t')]]$
　　　　b.　Factivity inference:　　　　　　$\exists t \, \exists e \, [Q(t) \wedge P(e) \wedge \exists t' \, [t \prec t' \wedge \tau(e)(t')]]$
　　　　c.　Scalar interpretation:　　　　　$\exists t \, \exists e \, [Q(t) \wedge P(e) \wedge \exists t' \, [t \prec_i t' \wedge \tau(e)(t')]]$

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.

References. || Condoravdi, C. 2002. Punctual *until* as a scalar NPI || Espinal, M.T. 2000. Expletive negation, negative concord and feature checking || Giannakidou, A. 2002. UNTIL, aspect, and negation: A novel argument for two *Untils* || Karttunen, L. 1974. Until || Krifka, M. 2010. How to interpret "expletive" negation under *bevor* in German || Krifka, M. 1998. The origins of telicity || van der Wouden, T. 1994. Polarity and 'illogical negation' || Yoon, S. 2011. 'Not' in the mood. The syntax, semantics and pragmatics of evaluative negation ||

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