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

Paola Cépeda
Stony Brook University

1 Introduction

The label *expletive* or *pleonastic negation* is frequently used in the literature to refer to a negative element that seemingly does not have a semantic contribution in certain specific environments. For instance, Spanish sentences (1) and (2) have traditionally been described as identical in meaning (Espinal 2000; Bosque 1980) under the assumption that (2) contains an expletive negation in the *hasta*-clause, 'until' (the *until*-clause appears between square brackets '[…]'):

(1) *Ana   no   se   irá   [hasta   que*
     Ana   NEG   CL   will.go   until   that
     María   cante   el   himno   nacional]
     Maria   sings.SUBJ   the   anthem   national
     'Ana won't leave until Maria sings the national anthem.'

(2) *Ana   no   se   irá   [hasta   que*
     Ana   NEG   CL   will.go   until   that
     *María   **no**   cante   el   himno   nacional]*
     Maria   **NEG**   sings.SUBJ   the   anthem   national
     'Ana won't leave until Maria sings the national anthem.'
     (Lit.: 'Ana won't leave until Maria doesn't sing the national anthem.')

The negative element *no* 'not' in the *hasta*-clause in (2) has been described as expletive. Theories involving logical absorption (Espinal 1992), a logically vacuous operator (Brown 1999), the identity function (van der Wouden 1994), or simply a non-negative meaning (Espinal 2000) have been put forward to explain the apparent expletive nature of the negation in this case and similar cases in different languages. However, sentences (1) and (2) are actually *not* identical in meaning, and, as anticipated, the expletive approach fails to accurately describe these sentences.

In this paper, I show that the negation in the *hasta*-clause does in fact contribute to the meaning calculation and, therefore, there is no support to describe this negation as expletive. I analyze the semantic differences between sentences such as (1) and (2), specifically with respect to the location of the main eventuality in time, and show that they have different truth conditions. My main proposal is that the semantic contribution of the so-called "expletive" negation is to negate that the

eventuality in the main clause holds during the interval denoted in the *hasta*-clause, and restricts time of actualization of such eventuality to the complement of that interval. The result is that the eventuality in the main clause is expected to hold after the interval denoted by the *hasta*-clause is finished. The novelty of my proposal is the comparison of the aspect (in particular, the durativity component) of the eventualities expressed in the *hasta*-clause. Even though the contribution of the negation is clear when the *hasta*-clause contains an accomplishment, it is not so evident when the *hasta*-clause contains an achievement. I propose that this effect is precisely what creates an illusion of expletiveness.

In section 2, I offer a brief discussion on the two values of *until* and focus on the semantics of punctual *until*. In section 3, I analyze Spanish punctual *hasta*-clauses containing an accomplishment. I show that the presence of the so-called "expletive" negation changes the time of actualization of the eventuality in the main clause. In section 4, I analyze Spanish punctual *hasta*-clauses containing an achievement. I show that the lack of durativity of the interval expressed in the *hasta*-clause is responsible for creating an illusion of expletiveness of the negation. In section 5, I offer a formalization for the semantic contribution of the "expletive" negation. The paper concludes that the "expletive" negation cannot be considered expletive at all.

2   Calculating the semantic contribution of punctual *until*
In this section, I discuss the differences between atelic *until* and punctual *until*. I also offer a semantic analysis of punctual *until*.

2.1   Defining punctual *until*
For the purposes of this paper, I assume that *until* has two different values (Karttunen 1974; Condoravdi 2002; Giannakidou 2002). First, *until* can pick a salient time of the interval in which an eventuality is transpiring. Second, *until* can mark the time in which an eventuality actually takes place. The first value is a case of atelic *until* and the second one, punctual *until*; both are illustrated in (3):

(3)   a.   Ana will sing until noon.   atelic *until*
       b.   Ana won't leave until noon.   punctual *until*

Regarding the first value, atelic *until* has been described as compatible with durative eventualities and it has been called *durative until* in the literature (Condoravdi 2002; Giannakidou 2002). This is partially true. Even though atelic *until* is incompatible with non-durative eventualities, as shown in (4a), not all durative predicates can combine with atelic until, as the ungrammaticality of the sentence in (4b) illustrates (the relevant reading in both sentences is one with no repetitive action):

(4)   a.   *Ana will leave until noon.

b. *Ana will sing the hymn until noon.

It follows that an eventuality is compatible with this first value of *until* only if it is atelic. Atelic eventualities such as states and activities do not have well-defined termination points (Hitzeman 1991) and, therefore, may be modified by an *until*-clause. This is shown by the examples in (5):

(5) a. Ana will be sad until noon.   state
    b. Ana will sing until noon.   activity

A further property of atelic *until* is that it does not entail any change in the durative eventuality once the time point expressed in the *until*-clause is reached. To offer an example, sentence (6) suggests that Ana quit her job as an ambassador in 2016. But this interpretation is just a conversational implicature since it can be canceled by a continuation such as "In fact, she's still an ambassador".

(6) Ana was an ambassador until 2016.

As for the second value, punctual *until* does not express the length of an atelic eventuality but locates punctual eventualities in time (Karttunen 1974; Giannakidou 2002; Condoravdi 2002). As such, it is compatible with negated telic predicates, as in (3b), repeated below as (7):

(7) Ana won't leave until noon.

Punctual *until* entails a change once the time point expressed in the *until*-clause is reached. For instance, sentence (7) asserts that Ana won't leave before noon and it triggers the inference that Ana will leave once it is noon or shortly thereafter. Even though the predicate in the main clause appears negated, the eventuality expressed is positive (i.e. Ana will leave) and it *necessarily* holds. This is why sentence (7) cannot be followed by a continuation such as "In fact, Ana won't leave at all". I will elaborate on these components of the semantics of punctual *until* in the next subsection.

2.2 Interpreting punctual *until*

The semantic contribution of a punctual *until*-clause to the sentence meaning is built up by three components: a basic assertion, a factivity inference, and a scalar implicature. A terminological clarification is necessary at this point. I call *eventuality in the main clause* the positive version of the predicate in the main clause. For example, in sentence (7), the eventuality in the main clause is 'Ana will leave'. I illustrate the three components by analyzing the sentence in (7).

Concerning the first component, the presence of punctual *until* in a sentence commits the speaker to assert that the eventuality expressed in the main clause does not hold before the time expressed by punctual *until* is reached (Karttunen 1974;
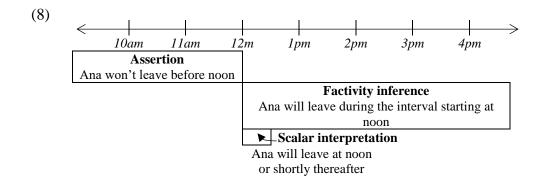
Giannakidou 2002; Condoravdi 2002). Hence the sentence in (7) is asserting that Ana will not leave before noon.

Along with this first component, punctual *until* triggers a factivity inference: the eventuality in the main clause *has* to hold once the time expressed in the *until*-clause is reached. Since this inference cannot be canceled (Bassa Vanrell 2015), this explains why the sentence in (7) is inconsistent with Ana not leaving at all. Moreover, the time expressed by punctual *until* is at the very beginning of an interval in which the eventuality in the main clause is expected to hold. Accordingly, for sentence (7), noon is the starting time of an interval in which Ana's leaving will occur.

Note that this factivity inference is not present in the uses of atelic *until* (recall the example in (6) and the brief explanation thereof). Only punctual *until* produces an open-ended interval starting at the time expressed by *until* and the eventuality in the main clause is expected to hold at any time in this interval. This generates alternatives associated with the temporal expression denoted by punctual *until*, all of them contextually restricted. Therefore, it is easy to see why Condoravdi (2002) and Giannakidou (2002) claim that punctual *until* must be interpreted as a scalar item. Scalarity appears when an operator is able to create alternative meanings beyond the explicit meaning of an assertion by placing them in a scale of more informative or stronger assertions. The speaker chooses to use the weakest one in the belief that none of the stronger assertions in the scale holds. In neo-Gricean approaches, a scalar meaning is attributed to a conversational implicature (Kratzer 2003); in syntactic-based approaches, a scalar meaning is attributed to the presence of an exhaustivity operator (Fox 2007; Chierchia 2013; Bassa Vanrell 2015). I will not argue in favor of any of these approaches since this discussion goes beyond the limits of this paper.

Consequently, a scalar meaning is the third component of the semantics of punctual *until*. The time expressed by punctual *until* is interpreted as the time the eventuality in the main clause actually holds. This is so because there are no reasons to believe that a stronger, more informative time than the one explicitly denoted by punctual *until* is more relevant.

Putting the three components together, the interpretation of sentence (7) is that Ana will leave at noon (or shortly thereafter). This is illustrated in (8):

(8)

When punctual *until* subordinates a clause, it quantifies over time intervals as well. For example, in (9), *Maria sings the national anthem*, the clause subordinated by punctual *until*, is actually denoting the temporal trace of such eventuality, in simpler words, the interval in which Maria is singing the national anthem. Accordingly, both *until noon* in sentence (7) and *until Maria sings the national anthem* in (9) are expressing time intervals.

(9)   Ana won't leave until Maria sings the national anthem.

2.3   Formalizing the semantic contribution of punctual *until*

In accordance with the discussion in the previous subsection, I propose a formalization for the interpretation of a sentence containing a punctual *until*. This semantics equally applies to cases in which punctual *until* takes either a phrase (such as *noon* in (7)) or a clause (such as *Maria sings the national anthem* in (9)) as its complement.

In the formalization in (10), P and Q are the predicates in the main clause and in the *until*-clause, respectively; t is a variable for a time interval, and t' for a contextually-determined interval; $\prec$ expresses precedence, and $\tau(e)$ is the temporal trace of the eventuality e.

(10)   <u>Semantics for sentences with punctual *until*-clauses</u>
  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:
       $\exists t \, \exists e \, [Q(t) \wedge P(e) \wedge \ \exists t' \, [t \leqslant t' \wedge \tau(e)(t')]]$

  c.   Scalar interpretation:
       $\exists t \, \exists e \, [Q(t) \wedge P(e) \wedge \ \exists t' \, [t \approx t' \wedge \ \tau(e)(t')]]$

The assertion in (10a) states that there exists a time interval t and an eventuality e such that t is the time interval expressed by punctual *until* and e is the eventuality in the main clause, and there does not exist any contextually-determined interval t' such that t' precedes t, and the temporal trace τ of the eventuality e corresponds to t'. The factivity inference in (10b) says that there exists a time interval t and an eventuality e such that t is the time interval expressed by punctual *until* and e is the eventuality in the main clause, and there exists a contextually-determined interval t' such that t is equal to or precedes t', and the temporal trace τ of the eventuality e corresponds to t'. Finally, the scalar interpretation in (10c) states that there exists a time interval t and an eventuality e such that t is the time interval expressed by punctual *until* and e is the eventuality in the main clause, and there exists a contextually-determined interval t' such that t' is approximately equal to t (which

represents the 'shortly thereafter' part of the informal description), and the temporal trace τ of the eventuality e corresponds to t'.

In summary, the meaning calculation for sentences with punctual *until* includes a basic assertion, a factivity inference and a scalar interpretation. In the next section, I apply this meaning calculation to the analysis of Spanish *hasta*-clauses.

3   Spanish *hasta*-clauses and the role of the "expletive" negation

In this section, I describe Spanish *hasta*-clauses, with particular attention to the ones with an accomplishment. I show that a sentence with an "expletive" negation in the *hasta*-clause receives a different interpretation from a sentence without it.
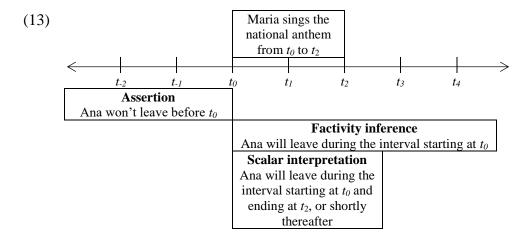
3.1   *Hasta*-clauses are *until*-clauses

Spanish *hasta*-clauses can be interpreted either as atelic *until*-clauses (as in (11)) or punctual *until*-clauses (as in (1), repeated below as (12)), just like English *until*-clauses. In the rest of this paper, I will focus the discussion on punctual *hasta*-clauses, since only punctual *hasta*-clauses may have a counterpart containing an "expletive" negation.

(11)   *Ana   estará   distraída   [hasta   que*
        Ana   will.be   distracted   until   that
        María   cante   el   himno   nacional]
        Maria   sings.SUBJ   the   anthem   national
        'Ana will be distracted until Maria sings the national anthem.'

(12)   *Ana   no   se   irá   [hasta   que*
        Ana   NEG   CL   will.go   until   that
        María   cante   el   himno   nacional]
        Maria   sings.SUBJ   the   anthem   national
        'Ana won't leave until Maria sings the national anthem.'

Interpreting a sentence containing a punctual *hasta*-clause involves the three components presented in subsection 2.2: an assertion, a factivity inference, and a scalar interpretation. In what follows I present these three component by analyzing sentence (12).

It is important to note that the eventuality expressed in the *hasta*-clause in this example (i.e. singing the national anthem) is an accomplishment, that is, a telic eventuality that has duration. Let us assume that Maria sings the national anthem during an interval that goes from t_0 to t_2. If that is the case, then we can establish the content of the three semantic components described above. First, the basic assertion is that Ana won't leave before t_0, that is, before Maria starts singing the national anthem. Second, the factivity inference is that Ana will leave during the interval starting at t_0, in other words, when Maria starts singing the national anthem. Third, the scalar interpretation is that Ana will leave during the interval starting at

t_0 and ending at t_2, that is, while Maria is singing the national anthem, or shortly thereafter. A graphic representation of this informal description is shown in (13):

(13)

Observe that in (13) the left edges of both the factivity inference and the scalar interpretation are aligned with t_0, the time at which Maria starts singing the national anthem. This suggests that the sentence in (12) is compatible with Ana leaving as soon as Maria starts singing. I will get back to this point in the next subsection.

3.2 Effects of the "expletive" negation in *hasta*-clauses

As pointed out in the introduction (section 1), an expletive negation is a negative element that apparently does not have a semantic contribution. Crosslinguistically, the so-called "expletive" negation appears in several syntactic environments, including temporal adverbials (such as *until*-clauses), comparatives (Donati 2000), *nearly*-clauses (Schwenter & Pons Bordería 2005), free relatives (Eilam 2008), subordinated clauses of predicates of prohibition or fear (van der Wouden 1994), exclamatives (Portner & Zanuttini 2000), among others.

When a negation appears in Spanish punctual *hasta*-clauses, ambiguity arises. Take the sentence in (14) as an example. This sentence is ambiguous: the negation in the punctual *hasta*-clause can be interpreted either as "regular" (14a) or "expletive" (14b).

(14) *No*   *me*   *iré*   *[hasta*   *que*
    NEG   CL   will.go   until   that
    no   *haya*   *luz*   *en*   *la*   *oficina]*
    NEG   has.SUBJ   light   in   the   office

   a. 'I won't leave until there's no power in the office.'

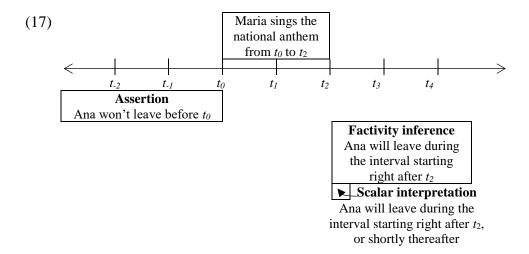   b. 'I won't leave until there's power in the office.'

For the reading (14a), one can assume that there is a limited power supply in the office, so I will leave only when the power has been totally consumed. In

contrast, for the reading (14b), one assumes that there is no power in the office, so I will come back only when the power is back. In the rest of this paper, the relevant readings for *hasta*-clauses including a negation will be the ones similar to (14b).

Because interpretations like (14b) are available, the negation in the *hasta*-clause has been described as expletive. Contrary to this idea, I claim that this negation is in fact contributing to the sentence meaning. In order to reveal the semantics of the so-called "expletive" negation, it is necessary to find contexts in which a sentence not containing an "expletive" negation, such as (15) (which repeats (12)), and a sentence containing an "expletive" negation, such as (16) (which repeats (2)) have different truth conditions, so that one of them is true while the other is false.
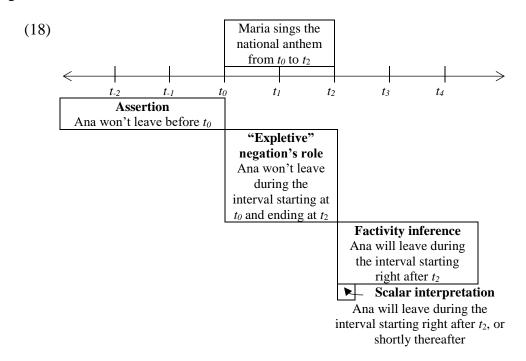
(15) *Ana   no   se   irá   [hasta   que*
       Ana   NEG   CL   will.go until   that
       María   cante   el   himno   nacional]
       Maria   sings.SUBJ the   anthem   national
       'Ana won't leave until Maria sings the national anthem.'

(16) *Ana   no   se   irá   [hasta   que*
       Ana   NEG   CL   will.go until   that
       *María   **no**   cante   el   himno   nacional]*
       Maria   **NEG**   sings.SUBJ the   anthem   national
       'Ana won't leave until Maria sings the national anthem.'
       (Lit.: 'Ana won't leave until Maria doesn't sing the national anthem.')

Let us consider the following context: Ana wants to leave once Maria starts singing the national anthem or while she is singing the very first verses at the latest. In this context, (15) is true, but (16) is false. This is so because by uttering (16) the speaker expresses that Ana will make sure that Maria sings the *whole* national anthem and she will leave only when Maria has finished singing. Sentence (15), however, is not a guarantee for that since it expresses that Ana may leave as soon as the national anthem has started.

To be more precise, sentence (16) contains an accomplishment and an "expletive" negation in the *hasta*-clause. If Maria sings the national anthem from t_0 to t_2, then the basic assertion is that Ana won't leave before t_0 (i.e. before Maria starts singing the national anthem), exactly the same assertion as in sentence (12). However, differently from (12), sentence (16) triggers the factivity inference that Ana will leave during the interval starting at t_2, that is, once Maria finishes singing the national anthem, and, accordingly, it also triggers the scalar interpretation that Ana will leave during the interval starting right after t_2 (right after Maria has finished singing the national anthem), or shortly thereafter. A graphic representation of this informal description is shown in (17):

(17)

Maria sings the
national anthem
from t_0 to t_2

t_{-2} t_{-1} t_0 t_1 t_2 t_3 t_4

Assertion
Ana won't leave before t_0

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

This suggests that the "expletive" negation is actually playing a semantic 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 said interval. As a result of this meaning calculation, the eventuality in the main clause is expected to hold *after* the eventuality in the *hasta*-clause is finished. The illustration in (18) completes (17) by adding the role of the so-called "expletive" negation:

(18)

Maria sings the
national anthem
from t_0 to t_2

t_{-2} t_{-1} t_0 t_1 t_2 t_3 t_4

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

A quick comparison between the illustrations in (13) (for a sentence without "expletive" negation) and (18) (for its counterpart containing an "expletive" negation) shows that the respective sentences are semantically different with

respect to the location of the main eventuality in time. In the former, Ana's leaving will hold at t_0 or shortly thereafter, whereas in the latter Ana's leaving will hold right after t_2 or shortly thereafter. In other words, while in (13) the left edge of the intervals in the factivity inference and scalar interpretation exactly coincide with the left edge of the interval denoted in the *hasta*-clause, this does not apply in (18), where the left edge of the intervals in the factivity inference and scalar interpretation coincide with the right edge of the interval denoted in the *hasta*-clause (i.e. its end).

The effect of the "expletive" negation is clear for a case such as (16), in which the *hasta*-clause includes an accomplishment (such as 'singing the national anthem'). In this next section, I show the effect of the "expletive" negation in *hasta*-clauses containing an achievement.
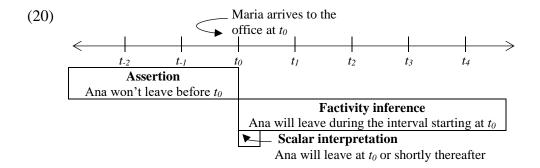
3 Not expletive after all

In this section, I explore the differences in meaning when an "expletive" negation occurs in *hasta*-clauses containing achievements. I claim that the effect is the same as the one found in the previous section. As a result, I offer a semantics for the so-called "expletive" negation.

3.1 *Hasta*-clauses containing achievements

In the previous section, I proposed that the role of the so-called "expletive" negation is to negate that the eventuality in the main clause holds during the interval denoted in the *hasta*-clause. The result is that such eventuality is expected to hold after the time interval expressed by the *hasta*-clause has ended. This is clear when such interval has duration and extends over more than one time point. However, when the interval is so small that it contains only one time point, the difference in time location is not so straightforward. Let us consider the following example:

(19) *Ana*   *no*   *se*   *irá*   *[hasta*   *que*
      Ana   NEG   CL   will.go   until   that
      María   *llegue*   *a*   *la*   *oficina]*
      Maria   arrives.SUBJ   to   the   office
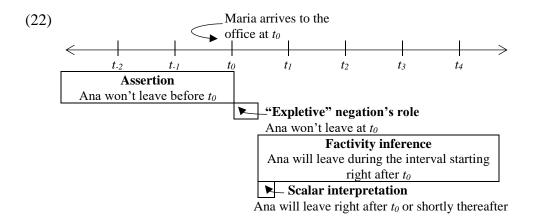   'Ana won't leave until Maria arrives to the office.'

Note that in (19) the eventuality in the *hasta*-clause (i.e. arriving to the office) is an achievement, that is, a telic, non-durative eventuality. Assuming that Maria arrives to the office at t_0, then for sentence (19), the assertion is that Ana won't leave before t_0, that is, before Maria arrives to the office; the factivity inference is that Ana will leave during the interval starting at t_0, in other words, once Maria arrives to the office; and the scalar interpretation is that Ana will leave at t_0, when Maria arrives to the office, or shortly thereafter. An illustration of this informal description appears in (20):

(20)

Maria arrives to the
office at t_0

t_{-2} t_{-1} t_0 t_1 t_2 t_3 t_4

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

As shown in (20), the left edge of the intervals in the factivity inference and scalar interpretations exactly coincide with the interval denoted in the *hasta*-clause.

Now let us consider sentence (21), which is the counterpart of sentence (19) containing an "expletive negation in the *hasta*-clause.

(21)   *Ana*   *no*   *se*   *irá*   *[hasta*   *que*
      Ana   NEG   CL   will.go   until   that
      María   ***no***   *llegue*   *a*   *la*   *oficina]*
      Maria   **NEG**   arrives.SUBJ   to   the   office
      'Ana won't leave until Maria arrives to the office.'
      (Lit.: 'Ana won't leave until Maria doesn't arrive to the office.')

The interpretations of (19) and (21) are certainly different. While (19) is compatible with Ana leaving while Maria is crossing the office entrance, (21) is not. For (21) to be true, Ana has to make sure that Maria has actually arrived to the office before leaving. To be precise, there is a slight difference in the time at which Ana will leave. If we assume that Maria arrives to the office at t_0, then the assertion for sentence (21) is that Ana won't leave before t_0, that is, before Maria arrives to the office; the factivity inference is that Ana will leave during the interval starting right after t_0, once Maria has arrived to the office; and the scalar interpretation is that Ana will leave right after t_0, immediately after Maria has arrived to the office, or shortly thereafter. This suggests that the role of the "expletive" negation in the interpretation of (21) is to negate that Ana will leave during t_0 (exactly while Maria is arriving to the office). A graphic representation of this informal description is shown in (22):

(22)

Maria arrives to the office at t_0

t_{-2} t_{-1} t_0 t_1 t_2 t_3 t_4

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 comparison between (20) and (22) shows the different interpretations. In the former, Ana will leave when Maria arrives to the office of shortly thereafter; in the latter, Ana will leave immediately after Maria arrives to the office of shortly thereafter. These interpretations are similar, in particular because of the 'shortly thereafter' part. The intervals in the factivity inference and the scalar interpretation in (22) have left limits so close to those in (20) that speakers tend to think that the negation is vacuous and does not play any role in the meaning calculation of the sentence. But the so called "expletive" negation is actually changing the time location of the eventuality in the main clause by changing the left edge of the intervals in the factivity inference and scalar interpretation.

Due to the lack of durativity of the interval expressed in the *hasta*-clause, the effect of the "expletive" negation in changing the location of the main eventuality in time is not so evident in cases such as (22), in which an achievement is present in the *hasta*-clause. The lack of durativity of the achievement in the *hasta*-clause and its extremely fine level of granularity (Krifka 1998) creates an illusion of expletiveness.

By observing the differences between (20) and (22), we can be sure that the negation present in the *hasta*-clause is not expletive after all. It does play a semantic role in the time location of the eventuality in the main clause. In the next subsection, I formalize the semantic contribution of the so-called "expletive" negation.

3.2 Formalizing the semantic contribution of the "expletive" negation

Following the previous discussion, the so-called "expletive" negation does contribute to the meaning of the sentence it is included in. A formalization of its semantic contribution is proposed in (23). The symbols follow the legend outlined for (10), when the semantics for sentences with punctual *hasta*-clauses was proposed. Along with those symbols, $\prec_i$ means 'immediately precedes' and the particular contribution of the "expletive" negation is underlined in (23a):

(23)   Semantics for sentences with punctual *hasta*-clauses + "expletive" negation
   a.   Assertion:
        $\exists t \, \exists e \, [Q(t) \wedge P(e) \wedge \neg \exists t' \, [t' \prec t \wedge \tau(e)(t')] \wedge \underline{\neg[\tau(e)(t)]}]$
        $\Leftrightarrow \exists t \, \exists e \, [Q(t) \wedge P(e) \wedge \neg \exists t' \, [t' \preccurlyeq t \wedge \tau(e)(t')]$
   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:
        $\exists t \exists e \, [Q(t) \wedge P(e) \wedge \exists t'[t \prec_i t' \wedge \tau(e)(t')]]$

The assertion in (23a) states that there exists a time interval *t* and an eventuality *e* such that *t* is the time interval expressed in the *hasta*-clause and *e* is the eventuality in the main clause, and there does not exist any contextually-determined interval *t'* such that *t'* precedes *t*, and the temporal trace τ of the eventuality *e* corresponds to *t'*, and it is not the case that the temporal trace τ of the eventuality *e* corresponds to *t*. After reducing (23a), we can say that the assertion is that there exists a time interval *t* and an eventuality *e* such that *t* is the time interval expressed in the *hasta*-clause and *e* is the eventuality in the main clause, and there does not exist any contextually-determined interval *t'* such that *t'* is equal to or precedes *t*, and the temporal trace τ of the eventuality *e* corresponds to *t'*. This is what the second line in the assertion conveys. The factivity inference in (23b) states that there exists a time interval *t* and an eventuality *e* such that *t* is the time interval expressed in the *hasta*-clause and *e* is the eventuality in the main clause, and there exists a contextually-determined interval *t'* such that *t* precedes *t'*, and the temporal trace τ of the eventuality *e* corresponds to *t'*. Finally, the scalar interpretation in (23c) states that there exists a time interval *t* and an eventuality *e* such that *t* is the time interval expressed in the *hasta*-clause and *e* is the eventuality in the main clause, and there exists a contextually-determined interval *t'* such that *t* immediately precedes *t'*, and the temporal trace τ of the eventuality *e* corresponds to *t'*.

As shown on the first line of the assertion in (23a), the so-called "expletive" negation has very narrow scope: it only scopes over the temporal trace function. This narrow scope is supported by the fact that an "expletive" negation reading is lost when a strong negative polarity item (NPI) occurs in the *hasta*-clause. Observe (24):

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

The *hasta*-clause in sentence (24) contains a negation and the NPI *(no) tener ni un centavo*, '(not) have a red cent'. Differently from sentence (14), in which there

was an ambiguity generated by the presence of *no* 'not' in the *hasta*-clause, sentence (24) is not ambiguous. It means that Ana will leave only when Maria runs out of money. An "expletive" negation reading is not possible in this context. NPIs need to be licensed by negation, but an "expletive" negation cannot license NPIs. This inability suggests that its scope is very restricted in the clause.

Summarizing, in this paper I have proposed that the so-called "expletive" negation is not expletive because it does play a semantic role in the interpretation of a sentence. As an effect of its presence in Spanish *hasta*-clauses, the size of the time interval in which an eventuality is expected to hold changes. The role of the "expletive" negation becomes evident when contrasting the aspect, specifically the durativity component, of the eventuality whose temporal trace is expressed in the *hasta*-clause.

I want to suggest that the "expletive" negation does also play a role in the delimitation of the interval expressed in other temporal adverbial clauses in languages different from Spanish, such as German *bevor*-clauses 'before' (Krifka 2010) or Korean *–ci*-clauses 'since' (Yoon 2011). Moreover, this role may have applications to the cases of "expletive" negation beyond the temporal dimension, such as comparatives (Donati 2000), *nearly*-clauses (Schwenter & Pons Bordería 2005), free relatives (Eilam 2008), subordinated clauses of predicates of prohibition or fear (van der Wouden 1994), exclamatives (Portner & Zanuttini 2000), among others. I leave verification for this to future research.

4   Conclusions

I have shown that the so-called "expletive" negation in Spanish *hasta*-clauses is not semantically vacuous, but does actually contribute to the meaning of the sentence. Its role is to change the time of actualization of the eventuality in the main clause by negating that it will occur during the temporal interval expressed in the *hasta*-clause. When comparing a sentence with an "expletive" negation in the *hasta*-clause and one without it, it becomes clear that the assertion of the former entails the assertion of the latter, but not inversely. Consequently, their truth conditions are not identical, and it is safe to say that the expletiveness of the "expletive" negation is an illusion, and not a real phenomenon in natural languages. This discussion can be inserted in the general Chomskyan program of Full Interpretation (Chomsky 1986, 2005), according to which every element of SEM and PHON contributes to the interpretation, and there are no expletives.

References

Abels, K. 2005. "Expletive Negation" in Russian: A Conspiracy Theory. *Journal of Slavic Linguistics* 13.5-74.

Bassa Vanrell, M.M. 2015. One or two UNTILs? The case of single-UNTIL languages. Presentation at MIT LingLunch.

Brown, S. 1999. *The syntax of negation in Russian*. Stanford: CSLI Publications.

Chierchia, G. 2013. *Logic in grammar: Polarity, free choice, and intervention*. New York: Oxford University Press.

Chomsky, N. 2005. Three factors in the language design. *Linguistic Inquiry* 36.1-22.

Chomsky, N. 1986. *Knowledge of language*. New York: Praeger.

Condoravdi, C. 2002. Punctual *until* as a scalar NPI. In *The nature of the word*, ed. by S. Inkelas & K. Hanson, 63-654. Cambridge, MA: MIT Press.

Donati, C. 2000. A note on negation in comparison. *Quaderni del Dipartimento di Linguistica-Università di Firenze* 10.55-68

Eilam, A. 2008. The Crosslinguistic Realization of *–ever*. Evidence from Modern Hebrew. Ms. University of Pennsylvania.

Espinal, M.T. 1992. Expletive negation and logical absorption. *The Linguistic Review* 9.333-358.

Espinal, M.T. 2000. Expletive Negation, Negative Concord and Feature Checking. *Catalan Working Papers in Linguistics* 8.47-69.

Fox, D. 2007. Free choice disjunction and the theory of scalar implicatures. In *Presupposition and Implicature in Compositional Semantics*, ed. by U. Sauerland & P. Stateva, 71-120. Hampshire: Palgrave Macmillan.

Giannakidou, A. 2002. UNTIL, Aspect, and Negation: A Novel Argument for Two *Untils*. In *Proceedings of SALT XII*, ed. by B. Jackson, 84-103. Ithaca, NY: Cornell University.

Hitzeman, J. 1991. Aspect and Adverbials. In *Proceeding of the First Semantics and Linguistic Theory Conference (SALT I)*, ed. by S. Moore & A.Z. Wyner, 107-126. Ithaca, NY: Cornell University.

Karttunen, L. 1974. Until. In *Papers from the Tenth Regional Meeting of the Chicago Linguistic Society*, 284-297. Chicago: CLS.

Kratzer, A. 2003. Scalar Implicatures: Are There Any? Handout for the Workshop on Polarity, Scalar Phenomena, and Implicatures. University of Milan-Bicocca.

Krifka, M. 2010. How to interpret "expletive" negation under *bevor* in German. In *Language and logos. Studies in theoretical and computational linguistics*, ed. by T. Hanneforth & G. Fanselow, 214-236. Berlin: Akademie Verlag.

Krifka, M. 1998. The origins of telicity. In *Events and grammar*, ed. by S. Rothstein, 197-235. Dordrecht: Kluwer.

Portner, P. & R. Zanuttini. 2000. The force of negation in *wh*-exclamatives and interrogatives. In *Studies in negation and polarity: Syntactic and semantic perspectives*, ed. by L. Horn & Y. Kato, 201-39. New York: Oxford University Press.

Schwenter, S. & S. Pons Bordería. 2005. *Por poco (no)*: Explicación sincrónica y diacrónica de sus componentes de significado. *Lingüística Española Actual* XXVIII.131-158.

Tovena, L. M. 1996. An expletive negation which is not so redundant. In *Grammatical Theory and Romance Languages: Selected Papers from the 25th Linguistics Symposium on Romance Languages (LSRL XXV)*, ed. by K. Zagona, 263-274. Amsterdam: John Benjamins.

van der Wouden, T. 1994. Polarity and 'illogical negation'. In *Dynamics, polarity, and quantification*, ed. by M. Kanazawa & C.J. Pinon, 17-45. Stanford: Center for the Study of Language and Information.

Yoon, S. 2011. *'Not' in the mood. The syntax, semantics and pragmatics of evaluative negation*. Ph.D. dissertation. University of Chicago.