Apprehensive and frustrative uses of *before*[*]

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Abstract

Prior research has shown that the interpretational possibilities of the temporal connective *before* range from factual to non-factual. In this paper, I look at how context-dependent inferences can enrich the meaning of non-factual *before* ('avant que') clauses in French. My proposal is that, in a sentence like [*q* [*before p*]], non-factual *before* may receive two pragmatically enriched uses (i) an apprehensive use, where the agent responsible for *q* has the goal of avoiding *p* (after Anderbois & Dabkowski 2020); (ii) a frustrative use, where it is contrary to the expectations of the agent responsible for *q* that *p*. Going further, I address the question of expletive negation in *avant que* clauses, arguing that its role is to put emphasis on the connective's invited inferences of negative (teleological or stereotypical) preference. Finally, I generalize the account to other contexts where expletive negation occurs in French.

Keywords: *before* clauses, expletive negation, modality, context-dependency

1 Introduction

Previous works on *before* clauses (Heinämäki 1974; Ogihara; Beaver & Condoravdi 2003; Condoravdi 2010) have underlined how contextual factors play a significant role in determining whether *before* clauses are to be interpreted as factual or as non-factual. Building on this distinction, this paper presents evidence from attested examples that, depending on how the extra-linguistic context affects its interpretation (see also Rubinstein 2012; Yanovitch 2013), non-factual *before* can receive more than one pragmatically constrained use.

The connective *before* can receive three main types of uses: (i) a *consecutive* use, associated with a factual interpretation, (ii) an *apprehensive* use and (iii) a *frustrative* use, both associated with a non-factual interpretation. The following examples illustrate each of them.

(1) a. Jules was watching TV before he went to bed.
    b. Jim must catch the Greek vase before it falls.
    c. Catherine won't go to bed before she has found her pearl bracelet.

When the connective receives a basic consecutive use, see (1-a), it expresses that two states of affairs follow each other in time (*first*, Jules watches TV, *then* he goes to bed). When the connective receives an apprehensive use, see (1-b), it expresses a relation of negative purpose between the main clause and the subordinate clause. The main clause aims at avoiding the state of affairs described in the subordinate clause (to put it roughly, Jim must catch the Greek vase *so that* it does not fall). When the connective receives a frustrative reading, see (1-c), it expresses a relation of negative reason between the two clauses. The main clause results from the expectation that the state of affairs described in the subordinate clause will not happen (again, using an approximation, Catherine will not go to bed *for the reason* that she does not find her pearl bracelet).

On what grounds does the connective *before* permit such a range of uses? In this paper, I argue that the two pragmatically enriched uses of non-factual *before*, namely the apprehensive and the frustrative, follow from the temporal semantics of the connective. Casting the temporal semantics of *before* within Krifka (2010)'s model for German *bevor*, the *before* clause has a prospective meaning, which makes it inherently nonveridical, regardless of its variability in factuality (Giannakidou (1998) et seq.). As a matter of fact, I assume, building on Beaver & Condoravdi (2003), that the subordinate proposition p is evaluated with respect to a historical modal domain, where there is a possibility that p as well as a possibility that not-p. My point is that the extra-linguistic context may further supply the modal domain under consideration with a goal-oriented or a prediction-oriented ordering, which ranks the negative possibility as the best. The context supplies the apprehensive use of *before* with a negative teleological ordering and the frustrative use with a negative stereotypical ordering.

Besides, I will show how expletive negation is a cornerstone of the differences in the various uses of the connective *before*. In French, *avant que* clauses are a context in which expletive negation – a solitary negation marker with a restricted distribution, that does not reverse the truth-value of the clause it occurs in – can occur. In naturally occurring data, expletive negation is more frequent in *avant que* clauses that receive an apprehensive or frustrative use. Along with several others,

my take on the question of expletive negation is to consider it as a 'revealing agent', the value of which is to track a specific semantic component in the predicates with which it occurs (cf. the 'licenser question', Ladusaw 1996; Israel 1996; Giannakidou 1998). I will argue that expletive negation is semantically sensitive to (nonveridical) contexts that express negative preferences, within and beyond *avant que* clauses.

This paper is structured as follows. Section 2 provides an informal description of the three main uses of *avant que* in French. Section 3 proposes a formal analysis for each of these uses. Section 4 addresses the sensitivity question of expletive negation.

2 The range of uses of *avant que*

This section provides a description of three main uses of the connective *avant que* in context. It is not my intention to cover every use that the connective may have, but to identify and describe the most relevant ones in the ordinary use of this connective.

2.1 The consecutive use

The consecutive use has a meaning which is strictly temporal. Example (1-a), which translates to (2) in French, illustrates this use.

(2)   Jules regardait   la télé avant qu' il parte   se   coucher.
         Jules watch-IPFV the TV before that he go-SBJV REFL go-to-bed-INF
         'Jules was watching TV before he went to bed.'

The consecutive use of *avant que* is factual. In other terms, the *avant que* clause is interpreted under a retrospective viewpoint (Giannakidou & Zwarts 1999; Giannakidou 2014), as it refers to a (past or present) fact. It is convenient to give examples of the consecutive use of *avant que* where the main clause is in the past tense, as it shifts the temporal interpretation of the dependent *avant que* clause to a retrospective viewpoint. Example (2) is factual, as the *avant que* clause implies that Jules went to bed in the actual world. Example (3) as well, as the *avant que* clause implies that the speaker actually started to work.

(3)   Ce matin   (...) je mangeais   de fort   bon appétit un plat de
         this morning (...) I   eat-1SG.IPFV of strongly good appetite a   dish of
         pâtes (...) avant   que je me   mette   au travail.
         pasta (...) before that I   REFL put-1SG-SBJV to   work
         'This morning I've been eating a pasta dish with a strong appetite before I started to work.'[1]

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1 (Quignard, Pascal, *Le salon de Wurtenberg*, 1986)

As a consequence, the consecutive use conveys that the *avant que* clause event follows the main clause event in time, that it takes place subsequently. In example (2), the main clause and the *avant que* clause denote events that follow each other in time: first, Jules watches TV and then, he goes to bed. In (3), the speaker eats a pasta dish at first and starts to work subsequently. Summing up, the consecutive use of *avant que* denotes a relation of consecution between the main clause and the dependent clause, conveying that, first q and not-p, and then p.

2.2 The apprehensive use

Turning to the apprehensive use of *avant que*, already illustrated with example (1-b), which translates to (4) in French, it must be noted that the use of expletive negation is statistically frequent with this use (although it remains optional). The brackets, in the example below, are here to indicate the optionality of expletive negation.

(4)   Jim doit attraper le   vase grec   avant qu' il (**ne**)   tombe.
      Jim must catch   the vase greek before that it ExNeg fall-3SG.SBJV
      'Jim must catch the Greek vase before it falls.'

Two main characteristics of the apprehensive use of *avant que* can be singled out.

First, the apprehensive use of *avant que* is non-factual, as the dependent clause is interpreted under a prospective viewpoint (again, see Giannakidou & Zwarts 1999 and Giannakidou 2014), since it describes an event that is expected to happen but that did not yet happen at the time of the main clause (which generally coincides with the utterance time). With this use, the speaker does not know whether the *avant que* clause event will take place. Example (4) illustrates such a non-factual reading: it conveys that – since the vase didn't fall by the time of the main clause (that is to say, when Jim has to catch the vase) – the vase may or may not fall in the future course of events (depending on the outcome of Jim's catching the vase). In fact, both p and not-p remain live possibilities.

Second, the apprehensive use of *avant que* conveys a negative purposive inference. Apprehensive (or negative purposive) meaning is, for the most, conveyed by biclausal constructions (as discussed by Lichtenberk 1995; Angelo & Schultze-Berndt 2016; Vuillermet 2018; Kuteva, Aarts, Popova & Abbi 2019; Anderbois & Dabkowski 2020). Negative purposive inferences typically arise in structures that 'connect a clause encoding an apprehension-causing situation to a preceding clause encoding a [preemptive] situation' (Lichtenberk 1995: 295). As a matter of fact, with the apprehensive use of *avant que*, the main clause describes a preemptive situation. In general, the 'precautionary' clause is constructed with an imperative verb or a priority modal (after Portner's (2007) label for deontic, teleological and bouletic modals). The precautionary clause thus urges the addressee (or a third

person) to undertake a certain practical action. In example (4), the main clause is modalized with the priority modal *devoir* (translating to *must*), which assigns the agent the duty to catch a vase (on the verge of falling). For other examples, look at the main modalized clause in (5), also constructed with *devoir*, which assigns the agent the duty to go back to her highschool. Look also at the main clause of (6), modalized with the locution *faire mieux de* (which translates to prioritative *should better*, or *ought to*), where the speaker suggests the addressee to give her back the car keys, instead of keeping them (at the risk of unwanted consequences).

(5) Justine devait   regagner   [son lycée]   avant que ses parents
    Justine must-PST get-back-to her highschool before that her parents
    ne   préviennent   la police.
    EXNEG warn-3PL.SBJV the police
    'Justine had to get back to her high school before her parents called the police.'[2]

(6) Vous feriez mieux de me   donner les clés [de la voiture] tout de
    you   should better to CL.1SG give   the keys of the car   all of
    suite, avant que je **ne**   fasse   des histoires.
    next before that I EXNEG do-1SG.SBJV DEM stories.
    'You should better give me the car keys right now before I make a fuss.'[3]

Going back to the dependent *avant que* clause, it generally describes a situation that the agent of the main clause has the purpose of avoiding (by undertaking the preceding preemptive action). In example (4), the agent catches the vase with the purpose of avoiding that it falls on the floor and gets smashed into pieces. In (5), the agent is under the obligation to go back to her highschool, with the purpose of avoiding that her parents worry and call the police. As for (6), the agent is advised to give the speaker her keys back with the purpose of avoiding making her angry.

Summing up, with the apprehensive use of *avant que*, the *avant que* clause event is not actualized at the time of the main event and it may remain non-actualized subsequently. Indeed, the main clause describes a precautionary situation that is undertaken by the agent in control with the purpose of avoiding the subsequent (undesirable) event described by the *avant que* clause.

2.3   The frustrative use

The frustrative use of *avant que* was illustrated with example (1-c), which translates to French (7). With the frustrative use as well, expletive negation is statistically

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2 (Manoeuvre, Phillipe, *L'enfant du rock*, 1985)

3 (Koltès, Jean-Marie, *Quai Ouest*, 1985)

frequent although optional.

(7) Catherine ne   se   couchera   pas avant qu' elle (**n'**)
     Catherine NEG REFL go-to-bed-3SG.FUT not before that she ExNEG
     ait   retrouvé son bracelet de perles.
     have-3SG.SBJV found   her bracelet of pearls
     'Catherine won't go to bed before she has found her pearl bracelet.'

Again, two main characteristics:

First, the frustrative use of *avant que* clauses is non-factual. To explain it like previously, the *avant que* clause is interpreted under a prospective viewpoint: the event it introduces is not actualized at the time of the main clause and it may or may not be actualized at reasonably probable alternatives. For instance, example (7) implies that Catherine didn't find her pearl bracelet at the time of the main clause and that she may or may not find it later. Both *p* and not-*p* remain live possibilities.

Second, the frustrative use conveys a negative reason inference. Frustrative meaning arises as the *avant que* clause expresses the negative reason behind the action described by the main clause. Indeed, this use of *avant que* connects a frustration-causing situation to a preceding clause denoting a coercitive situation. A coercitive situation can be defined as a measure taken by the agent in control that constrains or inhibits her own behavior (or that of others). This coercitive measure generally consists in a negative event, describing an 'active inaction', that is to say a situation in which the agent has the 'strong volition not to do the denoted action' (see Zaradzki 2020). For instance, in (7), Catherine is actively not going to bed, in the sense that it could be expected from her to go to bed, but she is depriving herself from doing so. In (8) as well, the agent of the main clause (the speaker) is refraining from leaving, she is making an effort not to leave. As a matter of fact, the remainder of the text specifies that she is refusing to make way for another person to go where he's heading to.

(8) Si, j' exige des excuses. Je ne déboucherai[=partirai] pas avant
     Yes, I request DEM apologies. I NEG leave-1SG.FUT   not before
     qu' il **ne**   vous   ait   demandé pardon.
     that he ExNEG CL.2PL AUX-3SG asked   forgivance
     'Yes, I demand an apology. I will not leave before he apologized to you.'[4]

Going back to the *avant que* clause, it involves a (desirable) situation that the agent of the main clause expects not to happen (an 'unrealized goal', see Kroeger 2017; Overall 2017). The expected non-actualization of the *avant que* clause represents the personal motivation (see also Verstraete 2008) for the agent's decision to undertake

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4 (Aymé, Marcel, *Nouvelles complètes*, 2002)

the coercitive action described by the main clause. In other words, the frustrative *avant que* clause provides an explanation (a negative expectation) for the preceding coercitive clause. In (7), for instance, Catherine, the agent of the main clause, considers it most likely that she will not find her pearl bracelet, and for this reason she is actively refraining from going to bed (since she needs to stay awake to keep searching for it). In (8), the coercitive action undertaken by the agent of the main clause (that of standing in someone else's way) is motivated by the agent's expectation that this person will not apologize for his (offensive) behavior.[5] In (9), the agent is actively refraining from entering her father's office for the reason that she expects that her father will not forgive her shouting at him.

(9)   Mon cher papa, je me   meurs   de chagrin de   la   sotise que j'
       my   dear dad, I REFL die-1SG of grief   from the folly that I
       ai   faite de crier. Je n'   ose   rentrer avant que vous
       AUX.1SG done of shout. I   NEG dare-1SG enter   before that you
       ne   m'   aiez   pardonné.
       EXNEG CL.1SG AUX.1SG.SBJV forgiven.
       'My dear dad, I'm dying of grief for having behaved badly by yelling at you.
       I dare not enter before you forgave me.'[6]

Summing up, with the frustrative use of *avant que*, the *avant que* clause event is not actualized at the time of the main event and it may remain non-actualized subsequently. Indeed, the main clause describes a coercitive situation, caused by the agent's expectation that the intended situation described by the *avant que* clause will not happen.

3 Deriving the multiple uses

This section makes the case for a multi-layered account of the semantics of *before* in an attempt to address the question of how the core prospective temporal meaning of the connective is related to its consecutive use on a par, and to its apprehensive and frustrative uses, on the other, via different types of inferences. Section 3.1 introduces the several semantic ingredients that are necessary to build the multiple uses that the connective *before* has in context. Section 3.2 derives the consecutive use. Section 3.3 and 3.4 derive the apprehensive and frustrative use.

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5 Note that, in (8), the coercitive action undertaken by the agent (indirectly) aims at coercing a third person into bringing about the content of the *avant que* clause (namely, into apologizing). At the level of the speech-act, the biclausal construction can be analyzed as a threat.

6 (Diderot, Denis, *Lettres à Sophie Volland*, 1774)

3.1   Semantic ingredients

A (prospective) temporal meaning   I stand by the line of reasoning of Anscombe (1964); Ogihara; Del Prete (2008) and Krifka (2010), who have previously argued that *before* names a relation between an event that is not (yet) actualized at or before the time at which the main clause is instantiated, and the main clause event. Within this perspective, the time variable at which the *before* clause is to be interpreted gets its value from *not* being anterior or simultaneous to the time at which the main clause is true, see the entry (10) from Krifka 2010: the *before* clause denotes a future event with respect to the main clause event.

(10) $[\![A \; before \; B]\!] =$
    $\lambda t[[\![A]\!](t) \wedge \neg \exists t'[t' \leq t \wedge [\![B]\!](t')]$

The entry (11) rephrases the former entry to make *before* operate on propositions rather than events.[7] The entry (11) conveys that the *before* clause is not instantiated for all times that precede or are simultaneous to the time t of the world-time pair $\langle w, t \rangle$ at which the main clause is instantiated (which is, in general, the world-time pair of the utterance context).

(11) $[\![before]\!] = \lambda p.\lambda q.\lambda w.\lambda t$
    $\langle w, t \rangle \in q$ and $\neg \exists t'[t' \leq t$ such that $\langle w, t' \rangle \in p]$

Summing up, the temporal meaning of the connective, which is 'conceptually negative from the point of view of the event in the main clause' (Thompson, Longacre & Hwang 2007: 247), denotes a prospective temporal relation.

A (nonveridical) definedness condition   The temporal meaning of *before* being intrinsically prospective, the nonveridicality of *before* is *absolute* (Giannakidou 1998: 109), irrespective of its different interpretational possibilites (i.e., its optional factuality). In effect, prospective meaning is (subjectively) nonveridical (see Giannakidou 2014, Giannakidou & Mari 2013; Giannakidou & Mari 2017b). Nonveridicality is defined as the property of an operator that do not entail the truth of the proposition it takes as argument, in the sense of Zwarts (1995); Giannakidou (1998), Giannakidou (1999), with respect to an epistemic model, in the sense of Giannakidou (2011); Giannakidou & Mari (2016); Giannakidou & Mari (2017a). Further, the intrinsic nonveridicality of the *before*-clause is what accounts for its subjunctive mood and NPI licensing behavior (see Giannakidou 1998; Giannaki-

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7 Making use of Beaver & Condoravdi (2003)'s notation $\langle w, t \rangle \in p$, to express that a proposition p is true in a world-time pair $\langle w, t \rangle$.

dou 2009, et seq.).[8] Building on Beaver & Condoravdi (2003), I assume that the nonveridicality of the *before* clause is relativized to an historical modal base, which concerns alternative course of future events which are reasonably probable given the course of events up to the world-time pair $\langle w,t \rangle$ at which the main event is instantiated. This historical modal base, noted $alt(w,t)$, is partitioned between p and not-p-worlds (see also Condoravdi 2001). As Beaver & Condoravdi (2003) note, historical alternatives can also be conceived as epistemic alternatives about what the course of events may be, from the perspective of the epistemic model of the speaker at the world-time pair of the main clause (but see Giannakidou & Mari (2017b) for a different perspective). In my proposal, the nonveridical layer of meaning is captured as a definedness condition intrinsic to the meaning of the connective (*contra* Beaver & Condoravdi (2003)), see (12).

(12)   Definedness conditions for *before*:
        $\exists w' \in alt(w,t)$: $p(w')$ and $\exists w'' \in alt(w,t)$: $\neg p(w'')$

Krifka (2010) proposes that the factual reading of *before* comes as an implicature, conveying that there is a time t'' that follows the time t at which the main clause is instantiated, such that the *before* clause event is true at t''. I will build on his proposal.

An invited (dispreferential) inference   Recently, Angelo & Schultze-Berndt (2016) have investigated how a temporal marker of consecution can conventionalize, via certain inferential mechanisms, an apprehensive reading. We follow these authors in assuming that the dispreferential inferences involved in some of the uses of *before* are *invited inferences*, that first arise in specific contexts to end up conventionalized. My point is that the the connective *before* conventionalizes inferences that supply the historical modal domain with respect to which p is evaluated with a secondary conversational background or 'ordering source' à la Kratzer (1991); Portner (2009). Not every conversational background may impose an ordering upon a historical modal base and certain conversational backgrounds happen to be more natural (see also Yanovitch 2013). This is the case of goal-oriented (see Mari 2017; Giannakidou & Mari 2021) and prediction-oriented (see Giannakidou & Mari 2013) conversational backgrounds. With the apprehensive use, the historical modal domain is assigned a teleological ordering ranking the not-p-alternative as the best. With the frustrative use, the historical modal domain is assigned a stereotypical ordering ranking the not-p-alternative as the best. Note that my proposal, inspired by that of Anderbois & Dabkowski (2020), ascribes the dispreferential attitude to the agent in control of the action described in the main clause. Moreover, to capture those not-p-worlds in

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the modal base ($\mathcal{M}$) which are Best-ranked with respect to the ordering source ($\mathcal{O}$), I will be using a notation à la Portner (2009); Mari (2017); Giannakidou & Mari (2021): $\text{Best}_{\mathcal{O}}(\mathcal{M})$.

3.2 Deriving the consecutive use

I will start by the semantics for the consecutive use of *avant que*, as in (13).

(13) Jules regardait   la télé avant qu' il parte   se   coucher.
      Jules watch-IPFV the TV before that he go-SBJV REFL go-to-bed-INF
      'Jules was watching TV before he went to bed.'

The core temporal meaning of this use, as given in (14-a) comes with the definedness condition that the *avant que* clause is nonveridical, as given in (14-b), as well as with a factual implicature (14-c).

(14) $[\![avant\ que_{\text{consecutive}}]\!] = \lambda p.\lambda q.\lambda w.\lambda t.$
      a. **Temporal meaning:** $\langle w,t \rangle \in q$ and $\neg\exists t'[t' \leq t$ such that $\langle w,t' \rangle \in p]$
      b. **Definedness condition:** $\exists w' \in alt(w,t)$: $p(w')$ and $\exists w'' \in alt(w,t)$: $\neg p(w'')$
      c. **Implicature:** $\exists t''[t < t''$ such that $\langle w,t'' \rangle \in p]$

Applying this semantics to (13) (regardless of tense and mood) we obtain:

(15) a. $[\![\text{PAST}\ (Jules\ regarde\ la\ télé)]\!] = \lambda w.$ Jules is watching TV in w
      b. $[\![\text{SBJV}\ (il\ part\ se\ coucher)]\!] = \lambda w.$ Jules goes to bed in w
      c. $[\![avant\ qu'il\ parte\ se\ coucher]\!] = \lambda q.\lambda w.\lambda t.$
          (i)   Temporal meaning: $\langle w,t \rangle \in q$ and $\neg\exists t'[t' \leq t$ such that Jules goes to bed at t' in $w]$
          (ii) Definedness condition: $\exists w' \in alt(w,t)$: Jules goes to bed in w' and $\exists w'' \in alt(w,t)$: Jules does not go to bed in w''
          (iii) Implicature: $\exists t''[t < t''$ such that Jules goes to bed at t'' in $w]$

The main clause in (15-a) conveys that Jules is watching TV (in the past). The (subjunctive) clause in (15-b), that *avant que* takes as argument, conveys that Jules goes to bed. The consecutive *avant que* clause in (15-c) takes the main clause as argument and conveys the temporal meaning that, for all times preceding or simultaneous to the time at which the main clause is instantiated, Jules didn't go to bed. (15-c) comes with the definedness condition that, given the course of events up to the time at which the main clause is instantiated, Jules has a reasonable chance of going to bed as well as a reasonable chance of not going to bed. Additionally, the *avant que* clause in (15-c) comes with the implicature that there is some time,

subsequent to that of the main clause, at which Jules goes to bed (in the actual world).

(16) $[\![(13)]\!] = \lambda w.\lambda t.$

    a.   Temporal meaning: Jules is watching TV in w at t and $\neg \exists t'[t' \leq t$ such that Jules goes to bed at t' in $w]$

    b.   Definedness condition: $\exists w' \in alt(w,t)$: Jules goes to bed in w' and $\exists w'' \in alt(w,t)$: Jules does not go to bed in w''

    c.   Implicature: $\exists t''[t < t''$ such that Jules goes to bed at t'' in $w]$

Overall, (16) conveys that Jules is watching TV (in the past) and that, for all times preceding or simultaneous to the time at which Jules is watching TV, Jules didn't go to bed. The definedness condition of (16) conveys that, given the course of events up to the time where Jules is watching TV, he has a reasonable chance of going to bed as well as of not going to bed. Finally, (16) conveys the implicature that Jules did go to bed at a time subsequent to that of the main clause. The semantic entry (14) thus does justice to the meaning of temporal consecution between the main clause and the *avant que* clause that this use conveys.

3.3   Deriving the apprehensive use

Let's move on to the apprehensive use of *avant que*, as in (17).

(17)   Jim doit attraper le   vase grec   avant qu' il (**ne**)   tombe.
      Jim must catch   the vase greek before that it ExNeg fall-3SG.SBJV
      'Jim must catch the Greek vase before it falls.'

With the apprehensive use, the temporal meaning, as given in (18-a), comes with the definedness condition that the *avant que* clause is nonveridical, see (18-b). Additionally, this use is analyzed as involving an invited inference of negative purpose, given in (18-c). This invited inference is modelled after Anderbois & Dabkowski (2020)'s recent proposal for apprehensive adjunct clauses. What the negative purposive inference in (18-c) conveys is that all the historical alternatives of w at t which are most compatible with the goals of the agent i, responsible for the (preemptive) action described by q, are not-p-worlds.

(18) $[\![\textit{avant que}_{\textbf{apprehensive}}]\!] = \lambda p.\lambda q.\lambda w.\lambda t.$

    a.   **Temporal meaning:** $\langle w,t \rangle \in q$ and $\neg \exists t'[t' \leq t$ and $\langle w,t' \rangle \in p]$

    b.   **Definedness condition:** $\exists w' \in alt(w,t)$: $p(w')$ and $\exists w'' \in alt(w,t)$: $\neg p(w'')$

    c.   **Invited inference:** $\forall w' \in \text{Best}_{\text{TELEO}_{i,q}}(alt(w,t))$: $\neg p(w')$

(presupposition: $\exists i$: RESP(i, q))

Applying this semantics to (17) (regardless of tense and mood, as well as of expletive negation) we obtain:

(19)   a. $[\![$*Jim doit attraper le vase*$]\!] = \lambda w$. Jim must catch the vase in w

        b. $[\![$SBJV (*il tombe*)$]\!] = \lambda w$. the vase falls in w

        c. $[\![$*avant qu'il (**ne**) tombe*$]\!] = \lambda q.\lambda w.\lambda t.$

             (i)   Temporal meaning: $\langle w,t \rangle \in q$ and $\neg \exists t'[t' \leq t$ such that the vase falls at t' in $w]$

             (ii)   Definedness condition: $\exists w' \in alt(w,t)$: the vase falls in w' and $\exists w'' \in alt(w,t)$: the vase does not fall in w''

             (iii)   Invited inference: $\forall w' \in \text{Best}_{\text{TELEO}_{i,q}}(alt(w,t))$: the vase <u>does not</u> fall in w'

                  (presupposition: $\exists i$: RESP(i, q))

The main clause in (19-a) conveys that Jim must catch the vase. The (subjunctive) clause (19-b), that *avant que* takes as an argument, conveys that the vase falls. As for the apprehensive *avant que* clause, (19-c) – which takes the main clause as argument – it conveys the temporal meaning that for all times preceding or simultaneous to the time at which the main clause is instantiated, the vase did not fall. Additionally, the apprehensive *avant que* clause (19-c) comes with the definedness condition that, given the course of events up to the time at which the main clause is instantiated, the vase has a reasonable chance of falling as well as a reasonable chance of not falling. Finally, the apprehensive *avant que* clause (19-c) conveys the invited inference that the goal of the agent responsible for the action described by the main clause is that the vase does not fall.

(20) $[\![(17)]\!] = \lambda w.\lambda t.$

        a.   Temporal meaning: Jim catches the vase in w at t and $\neg \exists t'[t' \leq t$ such that the vase falls at t' in $w]$

        b.   Definedness condition: $\exists w' \in alt(w,t)$: the vase falls in w' and $\exists w'' \in alt(w,t)$: the vase does not fall in w''

        c.   Invited inference: $\forall w' \in \text{Best}_{\text{TELEO}_{i,q}}(alt(w,t))$: the vase <u>does not</u> fall in w'

            where q = Jim catches the vase

            (presupposition: $\exists i$: RESP$(i, \lambda w$. Jim catches the vase in $w))$

Putting it together, (20) conveys that Jim must catch the vase and that, for all times preceding or simultaneous to the time at which Jim must catch the vase, the vase didn't fall. (20) also conveys that, given the course of events up to the time

where Jim must catch the vase, the vase has a reasonable chance of falling as well as a reasonable chance of not falling. Finally, (20) conveys that the goal of the agent of the main clause (i.e., Jim), responsible for the action of catching the vase, is that the vase does not fall.

3.4 Deriving the frustrative use

Next, we turn to the frustrative use of *avant que*, as in (21).

(21)   Catherine ne   se   couchera   pas avant qu' elle (**n'**)
       Catherine NEG REFL go-to-bed-3SG.FUT not before that she EXNEG

       ait   retrouvé son bracelet de perles.
       have-3SG.SBJV found   her bracelet of pearls
       'Catherine won't go to bed before she has found her pearl bracelet.'

With the frustrative use, the temporal meaning, given in (22-a), comes with the definedness condition that the *avant que* clause is nonveridical in (22-b). The frustrative use additionally comes with an invited inference of negative reason, in (22-c). This inference conveys that all the historical alternatives of w at t which are the most compatible with what is normally the case according to the agent i responsible for the (coercitive) action described by q, are not-p-worlds.

(22) $[\![$*avant que*$_{\textbf{frustrative}}]\!] = \lambda p.\lambda q.\lambda w.\lambda t.$
       a.   **Temporal meaning:** $\langle w,t \rangle \in q$ and $\neg\exists t'[t' \leq t$ and $\langle w,t' \rangle \in p]$
       b.   **Definedness condition:** $\exists w' \in alt(w,t)$: $p(w')$ and $\exists w'' \in alt(w,t)$: $\neg p(w'')$
       c.   **Invited inference:** $\forall w' \in \text{Best}_{\text{STEREO}_{i,q}}(alt(w,t))$: $\neg p(w')$
            (presupposition: $\exists i$: RESP(i, q))

Applying this semantics to (21), we obtain:

(23)   a. $[\![$FUTURE (*Catherine ne se couche pas*)$]\!] = \lambda w.$ Catherine doesn't go to bed in w
       b. $[\![$SBJV (PAST (*elle retrouve son bracelet*))$]\!] = \lambda w.$ Catherine finds her bracelet in w
       c. $[\![$*avant qu'elle (**n'**)ait retrouvé son bracelet*$]\!] = \lambda q.\lambda w.\lambda t.$
            (i)   Temporal meaning: $\langle w,t \rangle \in q$ and $\neg\exists t'[t' \leq t$ such that Catherine finds her bracelet at t' in $w]$
            (ii) Definedness condition: $\exists w' \in alt(w,t)$: Catherine finds her bracelet in w' and $\exists w'' \in alt(w,t)$: Catherine does not find her bracelet in w''

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(iii)   Invited inference: $\forall w' \in \text{Best}_{\text{STEREO}_{i,q}}(alt(w,t))$: Catherine <u>does not</u> find her bracelet in w'
(presupposition: $\exists i$: RESP(i, q))

The main clause (23-a) conveys that Catherine does not go to bed (in the future). The (past subjunctive) clause (23-b) that *avant que* takes as argument conveys that Catherine finds her (pearl) bracelet. The frustrative *avant que* clause (23-c) – taking the main clause as argument – conveys the temporal meaning that, for all times preceding or simultaneous to the time at which the main clause is instantiated, Catherine did not find her bracelet. The frustrative *avant que* clause in (23-c) also comes with the definedness condition that, given the course of events up to the time at which the main clause is instantiated, she has a reasonable chance of finding her bracelet as well as a reasonable chance of not finding it. (23-c) also comes with the invited inference that the (stereotypical) expectation of the agent responsible for the action described by the main clause is that Catherine does not find her bracelet back.

(24) $\llbracket(21)\rrbracket = \lambda w.\lambda t.$

a.   Temporal meaning: Catherine doesn't go to bed in w at t and $\neg\exists t'[t' \leq t$ such that Catherine finds her bracelet at t' in $w]$

b.   Definedness condition: $\exists w' \in alt(w,t)$: Catherine finds her bracelet in w' and $\exists w'' \in alt(w,t)$: Catherine does not find her bracelet in w''

c.   Invited inference: $\forall w' \in \text{Best}_{\text{STEREO}_{i,q}}(alt(w,t))$: Catherine <u>does not</u> find her bracelet in w'
where q = Catherine doesn't go to bed
(presupposition: $\exists i$: RESP(i, λw. Catherine doesn't go to bed in w))

Overall, (24) conveys that Catherine doesn't go to bed (in the future) and that for all times preceding or simultaneous to the time at which Catherine doesn't go to bed, Catherine did not find her bracelet back. Further, (24) conveys that given the course of events up to the time where Catherine does not go to bed, she has a reasonable chance of finding her bracelet as well as a reasonable chance of not finding it. Finally, (24) conveys that the (stereotypical) expectation of the agent of the main clause, responsible for the action of not going to bed (i.e., Catherine), is that she doesn't find her bracelet back.

4   What about expletive negation?

This section addresses the question of what are the reasons behind the frequent occurrence of expletive negation (in naturally occurring data) in apprehensive and frustrative *avant que* clauses ... and beyond. Section 4.1 proposes that expletive *ne* is a modal negation that enters modal harmony with the negative preference component

conveyed as an invited inference by these two uses of *avant que*. Section 4.2 argues, based on a diachronic corpus study focused on French data, that expletive negation enters modal harmony with a negative preference component, either conveyed at the pragmatic level (by *avant que*) or at the truth-conditional level (with other contexts). Section 4.3 gives a semantics for apprehensive attitudes and exceptive connectives, with the aim of accounting for the robust tendency of expletive negation to occur in the argument clause of these contexts, through the history of French.

4.1 A modal harmony item

In this section, I propose that the negator *ne*, when *ne* is the sole negator and has a distribution limited to (broadly speaking) apprehensive attitudes, exceptive connectives (e.g., *unless*, *without*), prospective temporal connectives (e.g., *before*, *until*) and comparative clauses, is expressing a preference towards not-*p*. This proposal is in line with several others, for which expletive negation conveys an expressive meaning of negative preference (which, along the lines of Yoon (2011); Zovko-Dinkovic (2017) and Liu (2019), is conveyed as a conventional implicature). The novelty of my approach consists in arguing that speakers chose to use expletive negation, which is optional in French, to put emphasis on (or 'select', Bordería & Schwenter 2005) the negative preference component of the matrix predicate. Indeed, I propose that this (modal) negator enters modal harmony with predicates that express a negative preference. Modal harmony – or modal concord – (after the notions in Lyons 1977; Huitink 2012; Giannakidou & Mari 2018) is the phenomenon whereby two modal elements (in general, a modal verb and a modal adverb) bearing (quasi-)similar modal meaning yield a unitary (vs. a cumulative) reading. If the point I am making is right and expletive negation enters modal harmony with the invited inference of negative (teleological or stereotypical) preference that enriches the meaning of *avant que* in French, then it is chosen by speakers to put emphasis on it. This proposal is building on Mari & Tahar (2020); Tahar & Mari (2021)'s diachronic back-up story. These authors argue that French expletive negation originates from the Latin prohibitive negation, a negation marker whose distribution is restricted to imperative clauses (whether root imperatives or embedded imperatives). They argue that in French, the Latin negator turns 'expletive' with the development of proposition embedding (within the CP-field headed by the complementizer *que*), as it grammaticalizes into a modal negator (see also Abels 2005; Zovko-Dinkovic 2017) to enter modal harmony with the matrix predicate. This proposal relies on the assumption that prohibitive negation, and later expletive negation, both convey a meaning of negative preference.

4.2 Expletive negation beyond *avant que*

	N° of words	*Craindre*	
		que	que ... ne$_{ExNeg}$
①	2 445 405	6	**11**
②	9 995 088	4	**21**
③	14 701 299	114	**165**
④	21 661 328	25	**596**
⑤	74 652 159	27	**1049**

Table 1: Distributions of expletive negation with *craindre* ('fear')

	N° of words	*A moins que*	
		que	que ... ne$_{ExNeg}$
①	2 445 405	0	0
②	9 995 088	1	0
③	14 701 299	2	3
④	21 661 328	55	**591**
⑤	74 652 159	129	**1343**

Table 2: Distributions of expletive negation with *à moins que* ('unless')

	N° of words	*Avant que*	
		que	que ... ne$_{ExNeg}$
①	2 445 405	**38**	1
②	9 995 088	**812**	6
③	14 701 299	**881**	2
④	21 661 328	**1549**	46
⑤	74 652 159	**2871**	918

Table 3: Distributions of expletive negation with *avant que* ('before')

This section aims at comparing the distribution of expletive negation in *avant que* clauses and in clauses introduced by other predicates. If, as Section 4.1 says, expletive negation is chosen to select the invited inference of negative preference that *avant que* conventionalizes, is it the case accross contexts? Could expletive negation select a component conveyed at another level? On the basis of which criteria can we find this out? The study presented here was conducted on a corpus of historical texts from French. It compares the distribution of expletive negation with (i) the apprehensive attitude *craindre* ('fear'), (ii) the exceptive connective *à moins que* ('unless') and (iii) the temporal connective *avant que* ('before'). It is based on the Frantext corpus, divided into 5 periods: ① Old French (1100-1330), ② Middle French (1330-1550), ③ Renaissance French (1550-1650), ④ Classical French (1650-1750), ⑤ Modern French (1750-1950).

Two observations can be made. First: throughout the history of French, the occurrence of expletive negation with *avant que* is infrequent (but increasing by period ⑤). Second: on the contrary, with *craindre* and *à moins que*, expletive negation is robust.[9] On the basis of these observations, I propose that expletive negation stands in modal harmony with a component conveyed at the pragmatic level by *avant que* (by invited inferences). I also conclude that expletive negation stands in modal harmony with a component conveyed at the truth-conditional level by *craindre* and *à moins que*, which leads us to the next section.

4.3 Hard-wired negative preferences

Expletive negation is especially robust with *craindre* ('fear') and *à moins que* ('unless'). These are 'lower-end degree modals' (an expression from Kratzer 2013), that is to say lexically negative modals with a degree semantics assigning a certain 'negative' degree (Heim 2006) of the gradable property at hand (e.g.; desirability, for *craindre*; likelihood, for *à moins que*) to the complement p. I'll propose two ingredients to build their semantics. First, focus-sensitivity. *Craindre* and *à moins que* are both focus-sensitive. The proposition they take as argument is compared to a set of alternative propositions, the comparison class C, arising from (contrastive) focus (in the line of reasoning of Heim (1992); Villalta (2008) and also Dretske (1972)). Second, a comparison of inferiority. The proposition that *craindre* and *à moins que* take as argument is involved in a comparison with the modal alternatives in C. They convey a '*less*-than' comparative meaning that can be captured with a degree-based semantics for comparatives (see also Villalta 2008; Romero 2016) à la Seuren (1973). Both *craindre* and *à moins que* convey that the proposition they take as argument doesn't reach a certain degree d of the gradable property at hand,

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9 Note that *à moins que* only emerges as a connective by 1650 (period ④), a pattern that matches that of English *unless*, see Traugott (1997)'s diachronic study.

that the modal alternatives reach. Now that we have these two ingredients in hand, let's focus on each of these predicates. Fear verbs (*craindre*) involve different modal layers (Anand & Hacquard 2013): a doxastic one (25-a) and a dispreferential one (25-b).

(25) $\llbracket craindre \rrbracket = \lambda a.\lambda p.\lambda w.$

    a. **Doxastic meaning:** $\exists w' \in \text{Dox}_a(w)$: $p(w')$

    b. **Undesirability meaning:** $\forall w' \in \text{Dox}_a(w)$: $\forall q \in C \to q \neq p$:
       $\exists d[\text{Desirability}(\text{Sim}'_w(q)) \geq d \land \neg\text{Desirability}(\text{Sim}'_w(p)) \geq d]$

The dispreferential layer in (25-b) assigns a little degree of desirability to the *p*-doxastic alternatives, as compared to their contextual alternatives *q* belonging to the comparison class *C*. As for the *à moins que*-connective, it is generally equated to a negative conditional clause. With Leslie (2009) (refining the account of von Fintel (1991)), in a construction like [*q* [*unless p*]] the *unless* clause substracts *p*-worlds from the domain of a covert universal quantifier – ranging over contextually relevant (or doxastic) worlds – which takes scope over *q*-worlds, see (26-a). Further, Traugott (1997) argued that *unless* in English originates from the grammaticalization of the comparative adverb of inferiority *(on) less than*. This diachronic origin, plausible for French as well (*moins que > (à) moins que*), would account for the connective's (modalized) comparative meaning of inferiority, in (26-b).

(26) $\llbracket à\ moins\ que \rrbracket = \lambda a.\lambda p.\lambda q =$

    a. **Negative conditional meaning:** $\forall w'[w' \in \text{Dox}_a(w): \neg p(w')]\ q(w')$

    b. **Unlikelihood meaning:** $\forall w' \in \text{Dox}_a(w)$: $\forall r \in C \to r \neq p$:
       $\exists d[\text{Likelihood}(\text{Sim}'_w(r)) \geq d \land \neg\text{Likelihood}(\text{Sim}'_w(p)) \geq d]$

The dispreferential layer in (26-b) assigns a little degree of likelihood to the *p*-doxastic alternatives, as compared to their contextual alternatives *r* belonging to the comparison class *C*.

5 Conclusion

This paper proposed that the temporal meaning of *before* can be pragmatically enriched, when the *before* clause receives a non-factual interpretation, by inferences of negative purpose or negative reason. Further, it proposed that expletive negation – a semantically bleached speech-act-like negation – stands in modal harmony with negative preferences, conveyed at the pragmatic level by French *avant que* ('before') or at the truth-conditional level, by *craindre* ('fear') and *à moins que* ('unless').

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