

# Expletive negation and semantic ambivalence

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## Abstract

The goal of this paper is to provide an account of one subtype of expletive negation—‘low expletive negation’—that explains the following without stipulation: 1) its relatively widespread distribution across languages (Jin and Koenig, 2021); 2) its restriction or virtual restriction to scalar constructions (i.e., relations between strictly ordered entities, like degrees or times); and 3) its subtle, non-truth-conditional contributions to a sentence. To do this, I introduce the concept of ‘semantic ambivalence,’ which characterizes contexts for which the contribution of an argument is truth-conditionally equivalent to the contribution of its negation. I argue that low expletive negation is just standard negation operating on a systematic kind of semantic ambivalence that arises in all scalar relations. Finally, I argue that the addition of a negation in a context in which it has no truth-conditional impact results in a manner implicature, which explains a variety of subtle, non-truth-conditional semantic properties that have been associated with expletive negation.

## 1 Introduction

Expletive negation, also known as spurious negation, characterizes uses of negation that don’t seem to impact the truth conditions of a sentence. We should understand the word ‘negation’ here to refer to the same string (or one of the same strings) as the language’s standard negation. Neg-words and negative concord—exemplified by English *none* and Romance *nada/niente/rien*, respectively—don’t qualify as expletive negation because those words are not string-identical to negation in those languages.<sup>1</sup>

The exemplars of expletive negation that have been given for English are not the most natural examples; I list common ones in (1).

- (1) a. I missed (not) seeing you this summer. (Jespersen, 1965)
- b. How can I avoid (not) doing stupid things? (Horn, 2009)

For both of these examples, there is a standard reading of the negation: in (1a), this amounts to the speaker expressing regret that they saw the hearer this summer. But another attested reading is one which the speaker expresses that they missed seeing the hearer. This is the expletive negation reading because it is truth-conditionally equivalent to a version of the sentence without negation.

Another perhaps more natural example involves the optional negation in (2):

- (2) Congress has a terrible track record of (not) doing something about AI.
- a. Congress has a terrible track record of doing something about AI.
- b. Congress has a terrible track record of not doing something about AI.

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<sup>1</sup>See Delfitto (2020) for additional reasons to distinguish between expletive negation, neg-words and negative concord.

Intuitively, the version with negation (2b) is truth-conditionally equivalent to the version without it (2a): in a context in which Congress has done precisely two things about AI, that qualifies as a terrible track record on the scale of succeeding to do something about AI. But it also qualifies as a good track record on the scale of doing nothing about AI, which amounts to a terrible track record from a subjective/moral point of view. In this context, the modifier *terrible* can vary contextually with respect to its dimension of measurement (having done a lot, having done not much at all), which means that a single number can count as terrible along two different and inverse scales.

In this paper, I argue that this particular sort of negation is expletive not because it means something different than standard negation, but because its argument is **semantically ambivalent**: it has the same meaning—at least in context—as its negation. That is the broader claim. The more specific insight pertains to scalar constructions, i.e., relations between strictly-ordered entities, as in (2). I claim these constructions have in common that the argument of negation can denote a maximal individual on a scale: a subspecies of semantic ambivalence I call **fixed-point ambidirectionality**. This explains why scalar relations are overrepresented in the inventory of (low) expletive negation contexts.

## 2 A background on expletive negation

Low expletive negation—negation that is optional, does not affect the truth conditions of a sentence, and occurs linearly in the same place as standard negation—occurs in a wide variety of constructions across languages. In this section, I detail the properties of low expletive negation that set it apart from high expletive negation (§2.1). I then exemplify the phenomenon of low expletive negation (§2.2), highlighting its correlation with scalarity.

### 2.1 High vs. low expletive negation

A consensus seems to be forming that there are two distinct types of expletive negation, corresponding roughly to high and low expletive negation (Greco, 2018, 2019b; Halm and Huszár, 2021).

Tsiakmakis (2025) is a study of expletive negation in Greek, arguing that high and low expletive negation in Greek are lexically distinct. One expletive negation, *dhen*, seems to be unambiguously high: it is licensed in high negation questions, exclamations, and rhetorical questions. The other, *min*, is licensed in negative verb constructions and exclusionary relations.

While neither type of expletive negation impacts the truth-conditions of the sentence it occurs in, there are other differences between the two: 1) low negation is straightforwardly optional, while high negation is considered obligatory (a critical part of the construction); 2) high negation is generally a left-periphery phenomenon, while the position of low negation is akin to that of standard negation; and 3) while high expletive negation doesn't license NPIs or neg-words (and is in fact compatible with PPIs), low negation can. I'll address each of these in turn.

#### 2.1.1 A difference in optionality

High expletive negation is considered obligatory, insofar as its presence gives the construction a different, expressive character it would not have without the negation. Some English examples are in (3) and (4) (from AUTHOR FORTHCOMING, expletive negation underlined); (5) and (6) are Italian and Hungarian examples (of 'negation sentence exclamations').

(3) If it isn't my favorite professor!

(4) Don't YOU look nice?!

- (5) E \*(non) mi è scesa dal treno Maria?!  
 and NEG CL.to.me is got off-the train M  
 ‘Mary got off the train!’ *Italian* (Greco, 2019b)
- (6) (Hat) János \*(nem) el olvasott egy könyvet?!  
 well J NEG PRT read.PST.3SG a book.ACC  
 ‘János has read a book!’ *Hungarian* (Halm and Huszár, 2021)

Low expletive negation, in contrast, is notable because its presence or absence affects neither the truth-conditions of the sentence nor its expressive power (although see §6.1 for a discussion of more subtle reported contributions of low expletive negation). It is therefore typically described as optional, and low expletive negation constructions are generally reportedly to be ambiguous between expletive- and standard-negation readings. A few examples are below; a more comprehensive list of examples of low expletive negation is in §2.2.

- (7) Rimarrò alla festa finché (non) arriva Gianni.  
 stay.1SG.FUT to-the party until NEG arrive.3SG.PRS G  
 ‘I will stay at the party until Gianni arrives.’ *Italian* ‘until’ construction (Greco, 2019a)
- (8) (Hogy) János miket el (nem) olvasott.  
 that J what.PL.ACC PRT NEG read.PST.3SG  
 ‘What things János has read!’ *Hungarian wh-exclamative* (Halm and Huszár, 2021)

### 2.1.2 A difference in height

High expletive negation is characterized in terms of its height in the clause; its position is consistently attributed to the CP (Greco, 2019b), or to some variety of illocutionary phrase above the CP (e.g. the ‘speaker deixis phrase’; Halm and Huszár, 2021). Low expletive negation is characterized as low at least relative to high expletive negation; since the goal of this subsection is to differentiate between high and low expletive negation, it’s this relative difference I will focus on.

In Hungarian, high expletive negation can cooccur with standard negation, and when it does, high negation is notably higher than standard negation (Halm and Huszár, 2021).

- (9) Hát \*(nem) nem JÁNOS vette fel a telefont?!  
 well NEG NEG J pick.PST.3SG PRT the phone.ACC  
 ‘It was not János who answered the phone!’ *Hungarian* (Halm and Huszár, 2021)

In English, ‘high-negation questions’ like (10a) are also characterized in terms of the relative height of their negation, relative to the standard negation in ‘low-negation questions’ (Ladd, 1981).

- (10) a. Isn’t there a vegetarian restaurant around here?  
 b. Is there not a vegetarian restaurant around here?

In contrast, low expletive negation is not in the left periphery. By virtue of the fact that low expletive negation constructions are sometimes construed as ambiguous between expletive and non-expletive readings, we can in fact infer the stronger conclusion that low expletive negation and standard negation are in the same position, at least linearly.<sup>2</sup> This ambiguity was illustrated in (1)

<sup>2</sup>There is one notable counterclaim in the literature: Halm and Huszár (2021) argue that, in Hungarian, standard negation is slightly higher than low expletive negation, with the latter in the TP, and the former in a NegP slightly higher than TP. Because standard negation and low expletive negation apparently cannot co-occur in Hungarian, and because Halm and Huszár 2021’s arguments for the relative position of standard negation and low expletive negation are Hungarian-specific, I will set this claim aside for now, and focus on the syntactic differences between high and

for English, and is illustrated in (11) for Spanish.

- (11) No volveremos hasta que no haya agua en nuestro departamento.  
 NEG return.1PL.FUT until that NEG has.SUBJ water in our apartment  
 ‘We won’t come back until there’s water in our apartment.’ *OR*  
 ‘We won’t come back until there’s no water in our apartment.’ *Spanish* (Cépeda, 2018)

### 2.1.3 NPI-licensing

According to Greco (2019a), no form of expletive negation can license strong NPIs; this makes both high and low expletive negation distinct from standard negation. But we can differentiate between high and low expletive negation using weak NPIs and neg-words, whose licensing seems to covary. I will focus below on weak NPIs for the sake of succinctness.

High expletive negation cannot license weak NPIs (underlined), as illustrated in (12) and (13).

- (12) a. Well aren’t you going somewhere special!  
 b. \*Well aren’t you going anywhere special! *Wood* (2014)
- (13) a. \*Maria non mi ha alzato un dito per aiutare Luca?!  
 M NEG CL.1SG has.3SG.PRS lifted a finger to help L  
 ‘Maria has lifted a finger to help Luke?!’ *Italian high negation* (Greco, 2019a)  
 b. \*Hát János nem el ütött senkit?!  
 well J NEG PRT hit.3SG.PST anybody.ACC  
 ‘János hit anyone with his car!’ *Hungarian high neg.* (Halm and Huszár, 2021)

In contrast, low expletive negation constructions, as a class, appear to have the capacity to license weak NPIs (and neg-words). But whether or not they do in fact license them seems to vary from construction to construction, and language to language. ‘Until’ constructions, for instance, license NPIs in Italian but not Spanish:<sup>3</sup>

- (14) Rimarrai qui finché non avrai alzato un dito per aiutar-mi.  
 stay.2SG.FUT here until NEG have.2SG.FUT lifted a finger for help-CL.1SG  
 ‘You will stay here until you have not lifted a finger to help me.’ *Italian* (Greco, 2019a)
- (15) #Olga no se irá hasta que Daniela no tenga ni un centavo.  
 O NEG CL.3SG will.go until that D NEG has.SUBJ even a cent  
 #‘Olga won’t leave until Daniela has a red cent.’ *Spanish* (Cépeda, 2018)

And expletive negation in ‘before’ constructions license NPIs in French but not Italian.

- (16) Olga mangera son déjeuner avant qu’elle ne regarde quoi que ce soit.  
 O eat.3SG.FUT her lunch before that-she NEG watch.3SG.PRS anything  
 ‘Olga will have lunch before she watches anything.’ *French* (Valentine Hacquard, p.c.)
- (17) #Spiega-le prima che non abbia la più pallida idea di come  
 explain.3SG.IMP-CL.3SG before that NEG has.3SG.SBJV the most faint idea of how  
 fare.  
 to.do  
 #‘Explain to her before she has the faintest idea of how to do it.’ *Italian* (Greco, 2019a)

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low expletive negation.

<sup>3</sup>The unacceptable examples are labeled ‘#’ instead of ‘\*’ because they are acceptable with a standard negation interpretation; (15), for instance, can have the interpretation ‘Olga won’t leave until Daniela doesn’t have a red cent.’

Finally, NPIs are licensed in comparatives formed with expletive negation, although NPIs are licensed in comparatives without expletive negation, as well.

- (18) Maria ha mangiato più mele di quante non ne abbia mai mangiate  
M has eaten more apples of than NEG CL.3PL have.3SG.SUBJ never eaten  
Gianni.  
G  
‘Maria has eaten more apples than Gianni has ever eaten.’ *Italian* (Greco, 2019a)

In sum, there is a contrast between high and low expletive negation in terms of their ability to license weak NPIs: no instances of high negation can license NPIs, but low expletive negation has the potential to license NPIs, depending on the language and construction. In light of this variation, the goal of this paper will be to holistically characterize low expletive negation in such a way that it allows for the licensing of NPIs in principle. Any theory of a particular low expletive construction in a particular language that does not manifest this capacity will need to supplement the account here with additional language- and construction-specific information I am not capable of providing in this more typological account.

Having specified what counts as an instance of expletive negation, and further what counts as an instance of low expletive negation, I turn to exemplifying the class in more detail, and across more languages.

## 2.2 Low expletive negation constructions

Jin and Koenig (2021) present an extensive cross-linguistic typology of low expletive negation, and report its occurrence in various constructions across 74 languages, summarized in Table 1.

| Trigger                                                                                                                               | Number of occurrences |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| BEFORE (UNTIL)                                                                                                                        | 50                    |
| FEAR (AFRAID)                                                                                                                         | 39                    |
| FORBID (PROHIBIT), WITHOUT (NOT WITHOUT)                                                                                              | 10                    |
| ALMOST (NEARLY), UNLESS, AVOID (INEVITABLE)                                                                                           | 8                     |
| PREVENT, DENY                                                                                                                         | 7                     |
| DOUBT, THAN                                                                                                                           | 6                     |
| BEWARE (WATCH OUT), REFUSE                                                                                                            | 5                     |
| WORRY, SINCE                                                                                                                          | 4                     |
| IMPOSSIBLE (CANNOT BE THAT), FROM (KEEP FROM, HOLD BACK FROM), TOO...TO                                                               | 3                     |
| CRITICIZE, ONLY (IT ONLY DEPENDS ON SOMEONE THAT)                                                                                     | 2                     |
| ADVISE AGAINST, ANXIOUS, BLAME, CANNOT WAIT, COMPLAIN, DESPAIR, DISLIKE, FORGET, HARDLY, HIDE, LACK, MISS, REGRET, RARELY, STOP, WARN | 1                     |

Table 1: The distribution of expletive negation across constructions, according to Jin and Koenig (2021)

Commas in this table indicate that two different phenomena come in at that number of cross-linguistic instances; for instance, the negative verb ‘doubt’ has been found to license expletive negation in six languages, as has the comparative construction (listed here as ‘than’).<sup>4</sup>

<sup>4</sup>When I refer to a word in a particular language, I will italicize the mention of that word, e.g. *before*. When I jointly refer to an English word as well as its cross-linguistic counterparts, I will use quotes, e.g. ‘before’.

It is clear from that survey that some expletive negation constructions are more widely represented cross-linguistically than others. In what follows, I categorize these constructions semantically, and provide examples of all of the constructions I’ve been able to find exemplified in the literature.

While truth-conditionally equivalent to their non-negated counterparts, many of these expletive negation constructions have been reported to carry implicated content that their less marked versions do not, or to impose subtly more restrictive truth conditions. This is exactly what we’d expect from the addition of words that have no truth-conditional impact; these manner implicatures are discussed in §6.1 as an add-on to this semantic proposal that aims to characterize the truth-conditional equivalence of the two versions.

### 2.2.1 Temporal relations

As Table 1 shows, expletive negation, across languages, is overwhelmingly triggered by the temporal relation ‘before’ (and crucially never by ‘after’). The languages Jin and Koenig (2021) list that license expletive negation in at least one temporal relation, other than those exemplified below, include Afrikaans; Bengali; Breton; Bulgarian; Burushaski; Catalan; Croatian; Dutch; Georgian; German; Hebrew; Hindi; Hungarian; Kadu; Karbi; Kashmiri; Kurux; Lakhota; Lithuanian; Maltese; Nigerian Pidgin; Persian; Polish; Punjabi; Rabha; Romanian; Russian; Slovenian; Tigre; Tigringya; Turkish; Tuvaluan; Tshangla; Ukrainian; and Yiddish. This phenomenon is illustrated below.<sup>5</sup>

- (19) Olga mangera son déjeuner avant qu’elle (ne) regarde la télévision.  
O eat.3SG.FUT her lunch before that-she NEG watch.3SG.SUBJ the television  
‘Olga will have lunch before she watches TV.’ *French* (Cépeda, 2018)
- (20) Yisheng (hai) (mai) lai yiqian, Zhangsan jiu si le.  
doctor yet NEG come before Z then die ASP  
‘Before the doctor came, Zhangsen died.’ *Mandarin* (Lin, 2016)
- (21) Lo fermerai prima che (non) faccia qualche sciocchezza.  
him stop-2sg-FUT before that NEG do-3sg-SUBJ some folly  
‘You will stop him before he does anything silly.’ *Italian* (Cépeda, 2018)
- (22) Wasure(-nai) uti ni henzi-o kakimasyoo.  
forget-NEG inside to answer-ACC let’s.write  
‘I will write an answer before I forget it.’ *Japanese* (Ramat, 2022)
- (23) gabl (maa) atzawaz fisht mafa ahl-ii.  
before NEG I.get.married.IPFV I.live.PFV with family-my

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<sup>5</sup>European French examples, like (19), are among the most canonical expletive negation data, arguably because French is so well-studied. However, European French expletive negation constructions are typically formed with only one of its negations: *ne* but not *pas* (although *pas* can apparently be optionally included, as in (i)).

(i) Ce n’est pas possible sans que cette réforme n’ait pas été adoptée globalement.  
this NEG-is NEG possible without that this reform NEG-has NEG been adopted globally  
‘This isn’t possible unless the reform has been adopted globally.’ *French* (Larivée, 1994)

This marks an unexpected contrast with standard negation constructions in European French, where *pas* is obligatory, but *ne* is optional. However, because both *ne* and *pas* are commonly analyzed as negations in French (Pollock, 1989), because many syntactic theorists characterize negation even outside of French as involving higher (covert) negations (Zeijlstra, 2004; Collins and Postal, 2014), and simply to not diverge from the rest of the literature on expletive negation, I will consider French constructions with spurious *ne* to be instances of expletive negation.

‘Before I got married I lived with my parents.’

*Januubi* (Jin and Koenig, 2021)

Just to underscore the point, none of the ‘after’ versions of these constructions is grammatical with embedded negation; in no language is the sentence ‘Zhangsen died after the doctor didn’t come’ semantically equivalent to the sentence ‘Zhangsen died after the doctor came’.

Expletive negation has also been reported in *until* and *since* constructions.

- (24) Resto finché (non) arriva qualcuno.  
 stay.1.SG until NEG arrive-3SG somebody  
 ‘I’ll stay until somebody arrives.’ *Italian* (Espinal, 2000)
- (25) Me quedaré hasta que (no) me echen.  
 I<sub>CL</sub> stay-FUT.1SG until that NEG me throw.3PL  
 ‘I will stay until they throw me out.’ *Spanish* (Espinal, 2000)
- (26) So sta in agitassion fin che (no) te go visto rivare.  
 be.1SG.PRS stayed in agitation until that NEG 2.SG.CL have seen to-arrive  
 ‘I worried until I saw you arrive.’ *Paduan* (Portner and Zanuttini, 2000)
- (27) Malia-ka nolay-lul (an) pwulu-nci olay toyessta.  
 M-NOM song-ACC NEG sing-since long.time became  
 ‘It has been a long time since Maria sang a song.’ *Korean* (Cépeda, 2018)
- (28) Quantes mentides (no) deu haver dir des quen estem casats!  
 how.many lies NEG must.3SG have told since that are.1PL married  
 ‘(S)he must have told so many lies since we got married!’ *Catalan* (Espinal, 2000)

I have seen no instance of expletive negation being licensed in ‘while’ constructions, and in fact, in languages like Hungarian and Russian, expletive negation has the power to disambiguate between ‘until’ and ‘while’ (see §5.6).

Temporal relations are, quite canonically, scalar relations: we model them as relating temporal intervals, or runtimes. Temporal relations have been characterized in terms of precedence, succession, and overlap, and only in those terms, consistently since Reichenbach (1947). This insight will play a role in the account of low expletive negation presented here.

## 2.2.2 Degree relations and preference statements

Expletive negation is also licensed in comparatives in some languages. The languages listed in Jin and Koenig (2021) as licensing expletive negation in comparatives—in addition to those exemplified below—include Catalan; Dutch; Livonian; and Spanish.<sup>6</sup>

- (29) Maria è più alta di quanto (non) sia Carlo.  
 M is taller than of how-much NEG be-3sg-SUBJ C  
 ‘Maria is taller than Carlo.’ *Italian* (Napoli and Nespor, 1976)
- (30) Marie est plus grande que Sylvie (ne) l’est.  
 M is more tall than S NEG it.is  
 ‘Marie is taller than Sylvie.’ *French* (Cépeda, 2018)

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<sup>6</sup>Some languages that form comparatives using ‘A-not-A’ constructions, of the form ‘X is A, Y is not’ (Stassen, 1985). Despite some claims in the literature (cf. Ramat, 2022), these do not qualify as expletive negation, because the negation truth-conditionally contributes to the formation of a distinct type of strategy of comparison. It is not, for instance, optional.

- (31) El se più furbo che (no) intelligente.  
 3SG.CL is more smart than NEG intelligent  
 ‘He is more shrewd than intelligent.’ *Paduan* (Portner and Zanuttini, 2000)

While less frequently reported, expletive negation is also licensed in superlatives and equatives—at least in French—although only the superlative appears in the typology in Jin and Koenig (2021). Jin and Koenig also list Dinka as licensing expletive negation in the superlative, but do not provide an example; the only one I’ve found comes from Quebecois French.<sup>7</sup>

- (32) La Russie c’est le plus grand pays qu’ il (\*n’) y a pas.  
 the Russia it.is the most big country that it NEG there.is NEG  
 ‘Russia is the biggest country there is.’ *Quebecois French* (Labelle, 2023)

European French is reported to license expletive negation in the equative:

- (33) a. C’est une recherche qui est aussi importante que (ne) l’est le séro-diagnostic.  
 it.is a research that is as important as NEG it.is the serodiagnosis  
 ‘It is a research that is as important as serodiagnosis.’  
 b. Elle en a dépensé autant qu’elle n’en a gagné.  
 she of.it has spent as.much that-she NEG-of.it has earned  
 ‘She has spent as much as she has earned.’ *European French* (Cépeda, 2018)

Espinal (2000) additionally reports that Spanish licenses expletive negation in preference statements like (36); this construction, too, is not reported in Jin and Koenig (2021), but it is also reported in Greco (2019a) for Italian.

- (34) Preferiría salir con vosotros que (no) estar trabajando.  
 prefer-1sg-COND leave with you than NEG be working  
 ‘I would rather go out with you than be working.’ *Spanish* (Espinal, 2000)
- (35) polin hole:n diaphtheiretai mallon e: ou tous aitious  
 city whole destroy more than NEG the guilty  
 ‘to destroy the whole city rather than the guilty ones’ *Ancient Greek* (Makri, 2013)
- (36) Preferisco uscire con te piuttosto che non guardare la televisione da sola tutta  
 prefer.1SG to.go.out with you rather than NEG to.watch the television by alone all  
 sera.  
 night  
 ‘I prefer going out with you rather than watching TV alone all night.’ *Italian* (Greco, 2019a)

Finally, Jin and Koenig (2021) report that expletive negation is licensed in Italian in ‘nearly’ (*per poco*) and ‘hardly’ (*appena*) constructions as well as in comparatives, but do not provide examples of either.

These gradable relations, too, are scalar; comparatives are the foundation of degree semantics (Cresswell, 1976; Kennedy, 1999), which manipulate degrees *d* or intervals (sets of degrees) as abstract objects that can be related to one another only by greater than, less than, or equal relations. This formal perspective will be presented more explicitly in §2.2.2.

Notice that we had an antonymy puzzle in dealing with temporal relations: while ‘before’ constructions readily license expletive negation, ‘after’ constructions never do. This is not true

<sup>7</sup>Notably, Quebecois expletive negation constructions are formed with *pas*, not *ne*. See footnote 5.

for degree relations: negative relations like ‘worse’ license expletive negation just as positive ones (‘better’) do.

- (37) La situazione in America è peggiore di quanto (non) si arrivi a  
 the situation in A is worse than how.much NEG REFL.CL arrive to  
 immaginare.  
 imagine  
 ‘The situation in America is worse than one can imagine.’ *Italian* (Napoli and Nespor, 1976)

This is another theoretical desideratum for a theory of expletive negation: building ordering-sensitivity into degree relations, but not temporal ones.

### 2.2.3 Exclamatives and surprisal contexts

A very significant portion of the literature on expletive negation focuses on its licensing in exclamatives and other surprisal contexts, although these constructions were not included in the survey in Jin and Koenig (2021). For this context, it is important to differentiate between exclamatives—which are formed from non-declaratives—and sentence exclamations, which are formed from sentences. Expletive negation is licensed in exclamations (also called ‘surprise negation sentences’), but crucially as high negation: it is not optional, and occurs in the left periphery.<sup>8</sup> Instances of low expletive negation in surprisal contexts are as follows:

- (38) Quines bogeries (no) devia dir!  
 which crazinesses NEG have.must say  
 ‘Which nonsenses she must have said!’ *Catalan* (Villalba, 2004)
- (39) (Hogy) János miket el (nem) olvasott.  
 that J what.PL.ACC PRT NEG read.PST.3SG  
 ‘What things János has read!’ *Hungarian* (Halm and Huszár, 2021)
- (40) Cossa (no) invitarisse-lo par parere importante!  
 who NEG invite-S.CL for to-seem important  
 ‘What people he would invite in order to seem important!’ *Paduan* (Portner and Zanuttini, 2000)
- (41) Was du (nicht) alles machst!  
 what you NEG all make  
 ‘What things you have made!’ *German* (Meibauer, 1990)

I have seen only one claim of expletive negation being licensed in nominal exclamatives, in Spanish.

- (42) ¡La de tonterías que no habrá dicho!  
 the.FEM of nonsenses that NEG would.have-3SG said  
 ‘The nonsense that (s)he would have said!’ *Spanish* (Villalba, 2004)

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<sup>8</sup>Villalba (2004), discussing the distribution of expletive negation in mirative constructions in Spanish, specifies that the sentence exclamation version of low expletive negation is unacceptable:

- (i) Maria (\*no) es de fuerte!  
 M NEG is of strong  
 (*intended*) ‘Maria is strong!’

Another important difference between exclamationatives and sentence exclamations—at least in many languages, see Nouwen and Chernilovskaya (2015) for exceptions—is that exclamationatives are subject to the ‘Degree Requirement’, but sentence exclamations are not (Rett, 2009). That means that the *wh*-phrases in exclamationatives actually range over degrees: this explains why e.g. (43a) cannot be felicitously used to express surprise that Mac picked two particular cards from the deck, as opposed to other ones (perhaps because he’s picked those same two cards before). This is in contrast to the sentence exclamation in (43b), which is fine in that scenario.

- (43) a. (My,) What cards Mac picked!  
 b. (Wow,) Mac picked the ace of spades and the king of diamonds (again)!

The exclamationative can, however, be used to express surprise at the (high) number of cards Mac picked, or perhaps that they’re particularly large, etc., anything on a gradability scale. Which means that exclamationatives, too, are a scalar construction: as Rett (2009) argues, they seem to denote degree relatives. Among many other things, this perspective also explains the morphological restriction on *wh*-exclamationatives (in many languages, they can’t be headed by, e.g., *why*).

#### 2.2.4 Propositional attitude verbs

The class of propositional attitude verbs that most canonically license expletive negation are negative verbs, i.e., verbs that seem to be the negative antonym in a verbal antonym pair. This includes: ‘forbid’ or ‘prevent’ (cf. ‘allow’); ‘doubt’ (cf. ‘believe’); ‘forget’ (cf. ‘remember’) ‘refuse’ (cf. ‘agree’), and other negative verbs like ‘avoid’, ‘complain’, ‘fear’ and ‘worry’. Collectively, they form a large portion of the expletive negation licensors in the survey in Jin and Koenig (2021), of which ‘fear’ is the most prevalent.

- (44) Em temo            que (no) escullin            nou director.  
 me be.afraid-1sg that NEG elect-3pl-SUBJ new director  
 ‘I am afraid that a new director would be elected.’ *Catalan* (Espinal, 2000)
- (45) Boję się żeby ktoś (nie) przyszedł.  
 scare.1SG REFL that.SUBJ someone NEG come.3SG.PST  
 ‘I am afraid that someone might come.’ *Polish* (Jabłóńska, 2003)
- (46) Boj-y-š, čto syn (ne) zaboľe-l.  
 fear-11SG.RFL that son NEG fall.ill.PST  
 ‘I am afraid that my son might get ill.’ *Russian* (Ramat, 2022)
- (47) Dubto que (no) mengi.  
 doubt-1sg that NEG eat-3sg-SUBJ  
 ‘I doubt that he eats.’ *Catalan* (Espinal, 2000)
- (48) a batu a (mana) graduate manang.  
 he delay he PFV.NEG graduate last.year  
 ‘He delayed graduating last year.’ *Zarma-Sonrai* (Jin and Koenig, 2021)
- (49) 9 míng wǎngyǒu mángzhe quànshuo, què wàng-le (méi) bàojǐng.  
 9 CLF netizen busy persuade but forget-PFV PFV.NEG call.police  
 ‘9 netizens were busy persuading but they forgot to call the police.’ *Mandarin* (ibid.)
- (50) Evitez qu’il (ne) vous parle!  
 avoid that he NEG to-you speak  
 ‘Avoid that he speaks to you!’ *French* (Delfitto et al., 2019)

Many languages reported in Jin and Koenig (2021) exhibit expletive negation for more than one of these sorts of predicates; Mandarin, for instance, licenses expletive negation in ‘fear’, ‘forget’ (49), ‘complain’, ‘regret’ and ‘avoid’; Zarma-Sonrai, a Nilo-Saharan language, licenses expletive negation in ‘hide’ as well as ‘delay’ (48).<sup>9</sup>

In contrast to these other constructions, negative verbs do not appear to be scalar constructions; almost universally, they’re thought to take propositions or sets of worlds as their internal arguments, possibly in addition to an event (Hacquard, 2010). In contrast to the suggestion in Cépeda (2018), I will not analyze them as scalar constructions; I will argue that scalar constructions systematically exhibit semantic ambivalence, while other constructions—these verbs among them—have the potential to exhibit a non-scalar-based semantic ambivalence.

### 3 Extant analyses of low expletive negation

There are a lot of extant accounts of expletive negation, with no clear consensus account. This is in part because, rather than focusing on the phenomenon from a cross-linguistic perspective, papers on expletive negation have tended to be language-specific, and to not differentiate between high and low expletive negation.<sup>10</sup> I won’t be able to review all extant theories here, but I’ll do my best to categorize and characterize the most prominent ones. In this discussion I focus exclusively on treatments of low expletive negation, or treatments of data that include low expletive negation; see AUTHOR FORTHCOMING for a discussion of treatments of high expletive negation.

#### 3.1 Syntax-based accounts of expletive negation

A typical syntactic perspective on low expletive negation is that it is quite a bit like negative concord: it is triggered by a higher negative operator, which means that these accounts need to treat ‘before’, negative verbs, and the comparative as negative operators, at least in some respect. These accounts treat expletive negation as semantically distinct from standard negation; specifically, they treat it as contributing no semantic meaning whatsoever (Espinal, 2000; van der Wouden, 1997; Zeijlstra, 2004; Brown and Franks, 1995). Some treat expletive negation as licensed

<sup>9</sup>Yoon (2022) argues that the very much not negative verb ‘hope’ also licenses expletive negation in Korean and Japanese; she provides only the example in (i-a).

- (i) a. Con-un meyli-ka oci(-anh)-ul-{ci/kka} kitayha-ko issta.  
J-TOP M-NOM come-NEG-FUT-NF.C hope-ASP  
‘John hopes that Mary might come.’ *Korean* (Yoon, 2022, 620)
- b. Yoko-wa Sota-ga uta-o utawa-nai-ka-to kitaishi-te i-ru.  
Y-TOP S-NOM song-ACC sing-NEG-PRT-PRT hope-PRT ASP-NPST  
(lit.) ‘Yoko hopes, wouldn’t Sota sing a song.’ *Japanese* (Goodhue and Shimoyama, 2024)

However, Goodhue and Shimoyama (2024) present a very compelling argument, for Japanese, that this negation is high negation, and that sentences like (i-b) correspond instead to a more matrix ‘Yoko hopes, wouldn’t Sota sing a song.’ Evidence for this comes from the mandatory presence of the complement as well as the absence of expletive negation in any other embedding verb in Japanese. As will become clear in §6.2, I will not be able to spend a lot of time on the issue of micro-variation in the licensing of expletive negation by propositional attitude verbs. But it’s worthwhile probing in more detail which of these verbs has a clearly subordinated propositional argument, and therefore licenses low expletive negation, and which can take non-subordinated propositions, and therefore involve high expletive negation. From this perspective, the literature on this same cross-linguistic variation in *wh*-scope-marking constructions (e.g. Dayal, 1993) could be informative.

<sup>10</sup>There are a few counterexamples to each of these claims: Cépeda (2018) looks at multiple languages, and generally focuses just on low expletive negation. Greco (2018, 2019a,b) and Halm and Huszár (2021) work hard to differentiate between high and low expletive negation, but stick to its description in a single language (Italian and Hungarian, respectively).

by a standard Neg head (Brown and Franks, 1995), but most additionally argue that expletive negation is licensed by a higher operator that is negation-like, analogous to their treatment of NPIs (involving feature-checking; Espinal, 2000) or negative concord (Zeijlstra, 2004). Zeijlstra (2004), for instance, drawing from Dutch, argues that expletive negation is licensed only in clauses that receive subjunctive mood.

Besides the lack of compositionality—the accommodation of a theory in which not all morphemes contribute to meaning, and/or not all meaning is attributable to morphemes, and whatever complications that raises for acquisition—there are some typological worries about these accounts. First is the assimilation to negative concord; this correlation makes sense in the early context of studies of expletive negation, which was disproportionately focused on languages that also license negative concord. Recent typological work (e.g. Jin and Koenig, 2021) has shown that this is not a necessary condition for low expletive negation, so we need to be able to explain how languages without negative concord might also license low expletive negation (as well as vice-versa).

Another issue involves generalizations about *where* low expletive negation is licensed: Napoli and Nespor (1976); Zeijlstra (2004) characterize expletive negation as being licensed wherever subjunctive mood is licensed, and Espinal (2000) characterizes it as licensed wherever there is a non-veridical operator, drawing on the account of NPI-licensing in Giannakidou (1998). These generalizations can’t extend to the licensing of low expletive negation in comparative constructions or *wh*-exclamatives, and requires a lot of stipulation to explain the licensing of low expletive negation in ‘before’ clauses, which are only optionally subjunctive-marked in some languages (e.g. Greek, exemplified in (51); see also Tahar, 2021), and which are only ambiguously non-veridical (Heinämäki, 1974, more in §5).

- (51) I Maria efigh-e prin (na) ftas-i o Yorghos.  
the M left.3SG.PST before SUBJ arrives-.3SG.PRS the Y  
‘Maria left before Yorghos arrived.’ *Greek* (Nikos Angelopoulos, p.c.)

Finally, syntax-based accounts are not able to explain attested semantic nuances of the inclusion of expletive negation, discussed at length in (Eilam, 2009; Cépeda, 2018), and which I will return to examine in Sections 5 and 6.1.

That said, there is a consistent and intrinsic push and pull between language-specific accounts with null operators, on the one hand, and language-general semantic accounts, on the other. The former, by design, have the capacity to account for every detail of every aspect of a phenomenon in a given language. But they are often unable to generalize to other languages successfully (certainly not to a typology), and they stipulate the phenomenon within a theory, rather than explaining it.

In contrast—and at the clear cost of accounting for language-specific details—the goal of this account of expletive negation is to first account for i) its cross-linguistic prevalence; ii) its invocation of negation, in particular, not some other morpheme; iii) its restriction to certain contexts, often scalar; and iv) for the few characteristics we can observe consistently demonstrated across languages: its potential to license NPIs; its optionality; and the subtle semantic contributions it can add. I think this is the only sustainable starting point for a theory of a widespread phenomenon, because it is the only way of accounting for typological facts as well as language-specific facts. But it is just a starting point, because it will need to be supplemented by language-specific observations and variation.

### 3.2 Meaning-based accounts of expletive negation

There are several meaning-based accounts of high expletive negation; see AUTHOR FORTHCOMING for a discussion. But when it comes to low expletive negation, there are only a handful of

meaning-based accounts. I’ll review them here, but will focus on the account in Cépeda (2018), as it is the closest to the analysis I propose.

Eilam (2009) argues that low expletive negation in Hebrew ‘until’ constructions is not negation, but is instead a domain widener, equivalent to the English ‘ever’. Because this account postulates two homophonous meanings—standard negation and ‘ever’—it does not have the potential to extend to other constructions (like the comparative), or to explain why negation is co-opted consistently across languages to serve this function.

Delfitto et al. (2019) focus on low expletive negation mostly in Italian, but they also consider data from other languages. They propose that low expletive negation serves to negate conversational implicatures. For instance, they analyze ‘before’ as a universal quantifier over times, as in (52):

- (52)  $\llbracket \text{‘A before B’} \rrbracket = \forall t : t < A. \neg B(t)$
- a. *assertion, informally*: ‘All times before A are not B times’
  - b. *conversational implicature*: ‘There is a time after A that B’

They argue that the presence of expletive negation negates this conversational implicature, resulting in a ‘before’ clause that doesn’t entail B occurred. However, as I’ll be able to argue in more detail in §5, (52) doesn’t accurately capture the semantics of ‘before’ clause: it incorrectly predicts, for non-punctual events, that ‘before’ clauses don’t require that B start, while the reality is that ‘before’ clauses don’t require that B finish. Additionally, this account cannot be (easily) extended to other constructions: the comparative and superlative constructions are not associated with any scalar implicature, in notable contrast to the equative.

The proposal in Cépeda (2018) strives to account for expletive negation cross-linguistically, and as semantically equivalent to standard negation. Her account focuses on temporal relations, and tries to extend that account to explain which constructions license low expletive negation and which don’t. In this respect, it is the closest account to the one advanced here, so I will spend the most time on it.

Cépeda (2018) offers a critical insight: she implies that expletive negation is licensed only in scalar relations (relations between two intervals on a scale), and argues that it returns the complement of the negated argument (just like standard negation does). As a result, in temporal relations like ‘A before B’, expletive negation results in a change to ‘A before B finished’. And for degree relations like ‘A is greater than B’, expletive negation results in a change to ‘A is greater than B isn’t’. It is this insight that is preserved in the present proposal.

However, the analysis presented in Cépeda (2018) is delivered anecdotally, through the explanation of diagrams corresponding to specific examples, rather than with a compositional formalism. It also focuses almost exclusively on temporal relations, devoting just a page to degree relations and attitude verbs, and not discussing exclamationatives. Because the account presents no compositional semantics, it’s hard to nail down all of the predictions and extensions. I’ll first present the broad insight, which is adopted below, and then I’ll highlight a few empirical holes and errors that lie in the specificities of her proposal.

The crucial insight is that for a scalar relation  $xRy$  (for instance, ‘ $x$  before  $y$ ’, for temporal intervals  $x$  and  $y$ ), the presence of negation (‘ $x$  before  $\neg y$ ’) just changes the relation to the complement set of  $y$  (on one particular side of the scale). This is diagrammed in Figure 1: this is a situation in which it seems true that  $x$  happened before  $y$ , and it’s therefore also a situation in which it’s true that  $x$  happened before  $y$  finished.<sup>11</sup>

<sup>11</sup>I am simplifying the explanation here slightly: Cépeda (2018) assumes that ‘before’ constructions are interpreted with an embedded null EARLIEST operator (Krifka, 2010a), and that expletive negation takes the complement set of the output of EARLIEST. The difference isn’t at play for the other temporal relations she discusses, like ‘until’ and

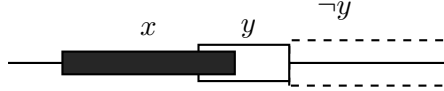


Figure 1: A schematic of a scalar relation  $R$  that allows overlap between its interval arguments  $x$  and  $y$

There are three critical problems with Cépeda’s account of low expletive negation: first, there is no clear explanation for why expletive negation is prohibited in ‘after’ constructions. She discusses ‘after’ only in the conclusion, and attributes the difference to a difference in overlap: “Temporal clauses with *after* never allow [expletive negation] in any natural language as the semantics of *after* does not allow temporal overlap between the main eventuality and the interval expressed in the subordinate clause” (Cépeda, 2018, 207). But it’s not clear what in the account would lead to this difference being a significant one for the licensing of expletive negation.

What’s worse, this perspective forces a characterization of ‘before’ and ‘after’ in which the former allows overlap but the latter does not, which is not at all how semantic accounts of temporal relations conceptualize the difference. From the very beginning, scholars have argued that ‘before’ and ‘after’ are in fact duals (Anscombe, 1964; Beaver and Condoravdi, 2003; Krifka, 2010a; Rett, 2020a), differing only in the ordering of their relation (temporal precedence  $\prec$  vs. temporal succession  $\succ$ ), and that any asymmetries must be explained independently of the core meaning of the relations. Furthermore, there is no independent reason to think that ‘before’ allows overlap between its two arguments; in other words, the sentence *A jumped before B screamed* is false in a situation in which the two events happened simultaneously.

Second, it’s unclear how to extend this principle to degree constructions. A straightforward extension of the claim that only overlapping scalar relations license expletive negation incorrectly predicts that expletive negation is licensed in equative constructions ( $\geq$ ) but not comparative constructions  $>$ . However, elsewhere, Cépeda argues that expletive negation in comparatives results in the complement of the internal scalar argument, and that “the complement of  $d$  is the set of degrees that are not  $d$ ” (p198). This is completely consistent with the present account (§4.3), but is not formally presented, and if it works, it is at odds with her account of temporal relations.

Finally, in order to extend her account of scalar relations to attitude verbs, Cépeda suggests that expletive negation in these constructions operates on a null unlikeliness ordering, or fails to include worlds that manifest the embedded predicate. In her discussion of (1a), the English *I missed (not) seeing you last summer*, Cépeda 2018 says (p206): “in the real world  $W_1$  something unusual happened that broke the chain of events that would have resulted in me seeing you last summer, but I missed that chance. [Expletive negation] exclude[s] the imprints of the eventuality described in the complement of *miss*.... As a result, there are only  $\neg[w(I \text{ saw you last summer})]$  imprints available for interpretation.” It’s clear that this derives a presupposition that the speaker didn’t see the addressee last summer, but it also predicts that the expletive-negation interpretation of (1a) is that the object of the speaker’s regret is the set of worlds in which they didn’t see the hearer, which is equivalent to the socially less appropriate standard negation interpretation.

In sum, there is a crucial insight that the present proposal borrows from Cépeda (2018): that there is something special about complement sets of intervals that make them more reliably semantically useful than complement sets of non-intervals. While this insight isn’t part of Cépeda’s formal proposal—which can’t accurately account for the particular distribution of expletive negation

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‘since’.

tion across constructions—it is the first suggestion in the literature that highlights the scalarity of (most) expletive negation constructions, and it’s a perspective that is carried, in a different formalism and with different background assumptions, into the proposal below.

## 4 Expletive negation in degree constructions

The present account of expletive negation takes as a starting point the assumption that every instance of negation has the same denotation, and that any apparently expletive negation is just one that fails to impact the truth conditions of the sentence it occurs in. Where low expletive negation is concerned, the idea is that the negation targets its semantic argument in the sentence, and returns its complement, just as standard negation does. But there are certain special cases in which this doesn’t make an impactful difference, and I’ve referred to these cases as ‘semantic ambivalence’, exemplified by (2) (repeated here as (53)).

- (53) a. Congress has a terrible track record of doing something about AI.  
b. Congress has a terrible track record of not doing something about AI.

In a world in which Congress has done two things about AI, this counts as their track record of doing something, and that is very low on the doing something scale! But in this same scenario, their track record of not doing anything something about AI is also bounded by two, it’s just that two defines a lower bound now (on the ‘not doing something’ scale), not an upper bound, as demonstrated in (54).

- (54) a. things done about AI:  $(0,2]$   
b. things not done about AI:  $(2,\infty)$

I’ll use standard interval notation to use  $( )$  to delineate open bounds (bounds that are not included in the interval) and  $[ ]$  to mark closed bounds, which are included in the interval.<sup>12</sup> So the interval in (54a) begins right after 0 and ends at 2; in a context in which things are always divisible into integers, this is equivalent to the set  $\{1,2\}$ . The interval in (54b), on the other hand, begins right after 2 and goes on to infinity; in our discrete context, this is equivalent to the set  $\{3,4,5,\dots\}$ .

Note that the two intervals inform one another: the most informative bound of a positive interval is its upper bound (2 in this case). The most informative bound of a negative interval is also 2, but it’s the lower bound for that scale. There’s a sense in which the two intervals are mutually entailing: the negation of a monotonic interval  $(0,n]$  will always be  $(n,\infty)$ , and the most informative bound of one will always be the most informative bound of another.

In this section, I’ll introduce this particular form of semantic ambivalence as **fixed-point ambidirectionality**. I’ll use the term to characterize any interval that shares its most informative bound with its complement. We will see that any scalar relation that targets informative bounds results in the licensing of expletive negation. Finally, I will argue that fixed-point ambidirectionality is the most common and systematic form of semantic ambivalence out there, which explains the prevalence of scalar constructions on the list of expletive negation constructions in Jin and Koenig (2021)’s survey.

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<sup>12</sup>In particular:

- (i) a. **open interval:**  $(a,b) = \{x : a < x < b\}$       c. **lower closed interval:**  $[a,b) = \{x : a \leq x < b\}$   
b. **closed interval:**  $[a,b] = \{x : a \leq x \leq b\}$       d. **upper closed interval:**  $(a,b] = \{x : a < x \leq b\}$

I will start by presenting a brief background on the degree semantics that underpins formal semantic accounts of degree constructions like the comparative.

#### 4.1 Degree semantics

Negating a normal, non-scalar proposition doesn't amount to anything close to synonymy. This is because we model propositions as sets of possible worlds, not strictly ordered with respect to one another (even when they're grouped into plurals).

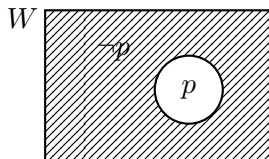


Figure 2: Set complementation of possible worlds

But other semantic entities are strictly ordered in any given context; that is, their plurals are organized linearly, in terms of scales or intervals (Schwarzschild and Wilkinson, 2002; Dotlačil and Nouwen, 2016). Their relations, then, are restricted to  $<$ ,  $>$ , and  $=$  (or some combination thereof). This group includes—at least—degrees, times, and locations. And relations in these strictly-ordered domains—like ‘taller’/‘shorter’, ‘before’/‘after’, and ‘above’/‘below’—exhibit special properties in natural language that other types of relations don’t, especially in contexts in which the relation cares about maxima (Rett, 2015a).

One notable characteristic of properties in these strictly-ordered domain is that they typically come in the form of antonyms. There are different kinds of gradable adjectives, and therefore different kinds of antonym pairs (Cruse, 1976; Kennedy and McNally, 2005), but I will focus here on the most straightforward kind of antonym pairs: those of relative adjectives like ‘tall’ and ‘short’.

By virtue of being antonyms, the properties ‘tall’ and ‘short’ inform one another; they’re inverses, which has led many to characterize negative antonyms as negations of their positive counterparts (but not vice-versa; Lehrer, 1985; Heim, 2007; Rett, 2015c). One way to illustrate this relationship between ‘tall’ and ‘short’ is to turn them into relations, in which case a relation of the form ‘ $x A^+ y$ ’ entails a relation of the form ‘ $y A^- x$ ’, as shown in (55).

$$(55) \quad x \text{ is taller than } y. \leftrightarrow y \text{ is shorter than } x.$$

Typically (since Cresswell, 1976), degree semanticists have characterized the difference between individual properties like *polka-dotted* and degree properties like *tall* as one of arity: while individual properties map an individual to a truth value (and are therefore type  $\langle e, t \rangle$ ), degree properties relate individuals and degrees, and are therefore type  $\langle e, \langle d, t \rangle \rangle$ . That means that, for any individual with a height, we can define the set of degrees to which that individual is tall, and the set of degrees to which that individual is short, as shown in (56).

$$(56) \quad \text{Adam is } d\text{-tall} / d\text{-short.}^{13}$$

- a.  $\{d: \text{a is } d\text{-tall}\}$
- b.  $\{d': \text{a is } d'\text{-short}\}$

<sup>13</sup>When they are used in the positive form, relative adjectives like these take on an additional property, called evaluativity, that requires the individual’s degree (of tallness or shortness) exceed a high contextual standard (of tallness or shortness). This is widely regarded to be a property of a given construction, not these adjectives, because the meaning disappears in comparative constructions like *Adam is taller than Doug*. See Rett (2015c) for extensive discussion; I also return to discuss the issue briefly in §6.1.

One prominent way to represent the relationship between degrees of a positive property and degrees of a negative property is consistent with the status of the antonyms as inverses of one another: the idea is that both properties are associated with a particular set of degrees—say,  $(0, \infty)$ —but that they differ in the ordering they impose on those degrees.

In a situation in which Adam is 5ft tall, then, the set of degrees to which he is tall is lower-bound by zero, and upper-bound by 5, as in (57a). And the set of degrees to which he is short is lower-bounded by 5 (and upper bounded by  $\infty$ ), as in (57b).

- (57) a.  $\{d: a \text{ is } d\text{-tall}\} = (0, 5]$   
 b.  $\{d': a \text{ is } d'\text{-short}\} = (5, \infty)$  *(to be amended)*

This is depicted in Figure 3.

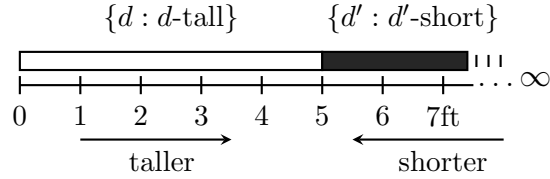


Figure 3: The antonymic relationship between relative adjectives

In Figure 3, the relations ‘taller’ and ‘shorter’ are accurately depicted as inverses, utilizing different orderings. This is because, intuitively, 5ft is taller than 4ft, but things are reversed for shorter: 4ft is shorter than 5ft. Instead of using  $>$  for taller and  $<$  for shorter, though, I’m going to use  $>_+$  and  $>_-$  (and, in what will be immediately relevant, instead of using MAX and MIN, I will use MAX $_+$  and MAX $_-$ ). This way I can talk about the same relation ( $>$  or MAX) and specify its ordering independently.

I will adopt one more notational convention that will be helpful. The intervals defined in (57) cover the correct degrees, but define both sets of degrees on the ‘tallness’ ordering (where the lower number is the lower bound). On the ‘short’ scale ( $>_-$ ), it’s actually the higher number that is the lower bound. I will adopt a convention where lower bounds—calculated relative to the interval’s ordering—are always on the left, and upper bounds on the right. This way we can accurately read off of an interval which ordering governs it. We thus need to amend (57) as in (58).

- (58) a.  $\{d: a \text{ is } d\text{-tall}\} = (0, 5]$   
 b.  $\{d': a \text{ is } d'\text{-short}\} = (\infty, 5)$  *(final)*

We need one more tool in our toolbox: there is a great deal of evidence that scalar relations implement **order-sensitive maximality** (Rullmann, 1995): what counts as maximal on a scale depends on the ordering of that scale (a scale-based implementation of ‘maximal informativity’, Beck and Rullmann 1999; von Stechow et al. 2014). The original motivation for this perspective, at least in the scalar domain, came from upward-monotonic questions like (59):

- (59) How much money can a graduate student live on?

In a situation in which the minimum amount of money a graduate student can live on is \$60,000, the degree relative underpinning the question in (59) is presumably bounded by \$60k on one end and  $\infty$  on the other. It seems as though questions, like most if not all semantic phenomena, care about the informative bound, even when it’s not the upper bound. More motivation for the importance and prevalence of this notion in the scalar domain is in Rett (2015a).

For us, then, intervals will be coerced into their most informative bound, which is their supremum (their upper bound), regardless of whether that bound is itself included in the interval. In (60),  $o$  ranges over orderings (the values  $+/-$ ).

(60) For any interval  $I$  with bounds  $a, b$  and ordering  $o$ ,  $\text{MAX}(I_{a,b}^o) = b$  iff  $\forall x \in I, x \leq_o b$ .

Informally, (60) picks out the bound of an interval  $I$  that every other point included in  $I$  is less than or equal to. This will be the supremum, or lub (least upper bound), of every interval, regardless of whether its most informative bound is closed.

In the next section, I present a standard degree semantics for the comparative; in §4.3 I explain how the standard assumptions here, combined with an insight from Cépeda, automatically predict that expletive negation is licensed in the comparative.

## 4.2 A scale-sensitive semantics for comparatives

Explicit comparatives are formed with an adjectival parameter (e.g. *tall*) and the comparative morpheme (*-er* or *more*) that marks the parameter. Syntactically, the comparative morpheme is characterized as taking two degree relatives as its arguments (Bresnan, 1973; Chomsky, 1977):

(61) a. A is taller than B (~~is tall~~).  
b.  $-\text{er}([_{CP} \text{OP}_d \text{ B is } d\text{-tall}]) ([_{CP} \text{OP}_{d'} \text{ A is } d'\text{-tall}] )$

Semantically, the comparative morpheme relates the most informative or maximal points of the intervals or sets of degrees denoted by the degree relatives (Schwarzschild, 2008).

(62)  $\llbracket \text{A is taller than B} \rrbracket = \text{MAX}_+(\{d': \text{tall}(a, d')\}) >_+ \text{MAX}_+(\{d: \text{tall}(b, d)\})$

Three of these components are scale-sensitive:

1. the first maximality operator, whose ordering is determined by the matrix degree relative [A is  $d'$ -tall] (in particular, by the valence of the adjective that forms the degree relative)
2. the second maximality operator, whose ordering is determined by the embedded degree relative [B is  $d$ -tall] (in particular, by the valence of the adjective that forms the degree relative)
3. the relation itself ( $>$ ), as determined by the comparative's parameter:  $>_+$  for *tall*, and  $>_-$  for *short*

Because the comparative's parameter is always the same as the adjective forming the matrix degree relative, this amounts to an implicit requirement that the matrix degree relative and the comparative relation always involve the same ordering. And it's easy enough to accommodate this assumption into the semantics of the comparative with scale-sensitive maximality operators, as in (62).

There is a long-standing question in the literature about whether there's additionally a requirement that the comparative's parameter be the same as the adjective forming the embedded degree relative. Some of the original and foundational accounts of comparatives in degree semantics argued there is, because comparatives like (63) are ungrammatical (Seuren, 1978; Bierwisch, 1989; Kennedy, 1999).<sup>14</sup>

<sup>14</sup>Note that there are grammatical comparatives with distinct parameters—like *This dinner was more expensive than it was tasty*—but they are comparisons of deviation, with the compared measures being not expensiveness vs. tastiness but the extent to which each deviates from a contextual standard. See Bale (2008) for the definitive treatment of these.

(63) \*A is taller than B is short.

This phenomenon, called ‘cross-polar anomaly’, was interpreted by Kennedy to be an indication that a semantic theory of adjectives needed to characterize antonyms as ‘incommensurate’, i.e. differently from indicated in Figure 3, in a way that prevents inference from one scale’s measurement to another.

However, there has since been reason to treat the ungrammaticality of (63) as a problem independent from the semantics of adjectives: in an in-depth investigation of these constructions, Büring (2008) (see also Kennedy, 2001) observes that these sentences are greatly improved when the first adjective is negative, and the second positive, as long as the two adjectives are associated with commensurate scales, as in (64).

(64) The ladder was shorter than the house was high.

Büring’s conclusion was that it’s bad to switch antonyms on the same dimension, but that doesn’t mean that the adjectives are incommensurate: a theory about why (63) is bad and (64) is more about the acceptability of redundancy and markedness than it is about the semantics of adjectives themselves.

So I will assume that there is no semantic prohibition against comparing an interval with one ordering with an interval with the reverse arguing, but instead that there are markedness-related prohibitions that rule out needlessly specifying the dimension of measurement (note that ??*A is taller than B is tall* is also quite odd), and especially needlessly switching the dimension’s ordering.

As a consequence of these assumptions, in a context in which A is 6ft tall and B is 5ft tall, we make the following predictions about the truth conditions of comparatives:

- (65)  $\llbracket \text{A is taller than B} \rrbracket = \text{MAX}_+(\{d' : \text{tall}(a, d')\}) >_+ \text{MAX}_+(\{d : \text{tall}(b, d)\})$   
 a.  $= \text{MAX}_+( (0, 6] ) >_+ \text{MAX}_+( (0, 5] )$   
 b.  $= 6 >_+ 5$  (true)
- (66)  $\llbracket \text{A is shorter than B} \rrbracket = \text{MAX}_-(\{d' : \text{short}(a, d')\}) >_- \text{MAX}_-(\{d : \text{short}(b, d)\})$   
 a.  $= \text{MAX}_-( ( \infty, 6 ) ) >_- \text{MAX}_-( ( \infty, 5 ) )$   
 b.  $= 6 >_- 5$  (false)

In (65), the positive-antonym comparative is predicted to be true as long as 6ft—the informative bound of the interval corresponding to A’s tallness—is greater on the ‘tall’ scale than 5ft, which is true. In (66), the negative-antonym comparative is predicted to be true as long as 6ft—the informative bound on the interval corresponding to A’s shortness—is greater on the ‘short’ scale than 5ft, which is false. We thus have an appropriate and independently-motivated semantics for the comparative, in which the comparative relation is scale-sensitive and relates informative bounds rather than intervals themselves.

### 4.3 Accounting for expletive negation in comparatives

The licensing of expletive negation in degree constructions—unlike those in temporal relations—isn’t sensitive to antonymy. In other words, expletive negation is just as licensed in ‘taller’ comparatives as it is in ‘shorter’ comparatives, while it is not licensed in ‘after’ temporal relations. (67) is repeated from (37).

- (67) La situazione in America è peggiore di quanto non si arrivi a immaginare.  
 the situation in A is worse than how.much NEG REFL.CL arrive to imagine

‘The situation in America is worse than one can imagine.

*Italian*

In order to port the independently-motivated semantics of the comparative to expletive negation, we need to ask the question: what happens when we put negation in the embedded argument of these comparatives? In English, as with the cross-polar anomaly cases, the result is generally ungrammatical.<sup>15</sup>

(68) \*A is taller than B isn’t.

Putting aside what is grammatical in English, what does our theory predict about what happens when we embed negation in a positive-antonym comparative? We predict that the set of degrees to which  $x$  is tall is bounded by their height, and we also predict that the set of degrees to which  $x$  is not tall is bounded by their height. Effectively, the prediction is that (68) is interpretable, and would receive a similar interpretation to a comparative without negation, or without a negative antonym. This prediction is depicted in Figure 4 and derived formally in (69).

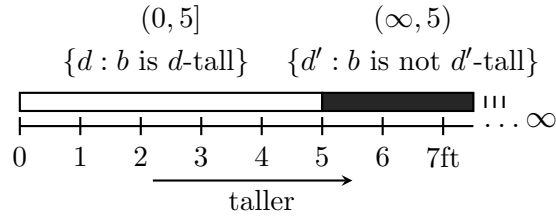


Figure 4: Negating positive-antonym degree intervals

Holding fixed our context in which A is 6ft tall and B is 5ft tall, we get:

$$\begin{aligned}
 (69) \quad & \llbracket \text{A is taller than B is not} \rrbracket = \text{MAX}_+(\{d' : \text{tall}(a, d')\}) >_+ \text{MAX}_-(\{d : \neg \text{tall}(b, d)\}) \\
 & \text{a.} = \text{MAX}_+( (0, 6] ) >_+ \text{MAX}_-( (\infty, 5) ) \\
 & \text{b.} = 6 >_+ 5 \quad (\text{true})
 \end{aligned}$$

(69) predicts the sentence is true in the context, because the most informative bound in the set of degrees corresponding to A’s tallness exceeds (on the ‘tall’ scale) the most informative bound in the set of degrees corresponding to B’s not-tallness, i.e. his shortness.

Notably, these truth conditions are strictly-speaking distinct from those in (65), because they manipulate a different interval as an embedded argument. But they are equivalent to the truth conditions in (65), given the relationship between a person’s tallness and shortness, as discussed in §4.1. So any context in which A is taller than B is tall is also a context in which A is taller than B is not tall, given our understanding of how degree relatives with a negation are interpreted. This is an example of fixed-point ambidirectionality: because the notion of maximality in natural language is scale-sensitive, and because a person’s degrees of tallness share a maximally informative bound with their degrees of shortness / not-tallness, we predict low negation in comparatives has no truth-conditional impact.<sup>16</sup>

<sup>15</sup>These sentences become grammatical in English when they have comparison of deviation readings, as in *The older they get the cuter they ain’t* (from *The Simpsons* Season 4 Episode 10; see footnote 14). So it seems as though there’s no syntactic prohibition against negating internal comparative arguments in English, but it’s not acceptable without a change in dimension. This makes it seem more plausibly a markedness issue; see §6.1 for discussion.

<sup>16</sup>Collins (2023) includes an extensive examination of adjectives negated by standard negation or the prefix *un-*, and concludes that both contribute low (predicate) negation. Since this account, too, predicts synonymy between *unhappy*, *not happy*, and *sad*, Collins’ work might provide good insight into why the expletive negation used in scalar constructions is always syntactically low.

The way this theory treats ‘tall’ comparatives with negated inner arguments is equivalent to the way this theory treats ‘short’ comparatives with negated inner arguments, which is to say, we correctly predict no antonymy asymmetry in the interpretation of negation in inner arguments of comparatives. (70) is once again interpreted in a context in which A is 6ft tall and B is 5ft tall.

- (70)  $\llbracket \text{A is shorter than B is not} \rrbracket = \text{MAX}_{-}(\{d' : \text{short}(\mathbf{a}, d')\}) >_{-} \text{MAX}_{-}(\{d : \neg \text{short}(\mathbf{b}, d)\})$   
 a.  $= \text{MAX}_{-}(\langle \infty, 6 \rangle) >_{-} \text{MAX}_{+}(\langle 0, 5 \rangle)$   
 b.  $= 6 >_{-} 5$  (false)

This follows automatically from the antonymic relationship discussed in the previous section.

There is novel and independent evidence for this approach to expletive negation in comparatives, to do with the notion of the complement of a degree interval. It turns out that the analysis in (69) and (70) only goes through because the adjectival parameter is a relative adjective, i.e. because the embedded interval argument is monotonic: its lower bound is zero, as in (71).

- (71) **relative adjectives** are associated with monotonic values  
 a. positive-scalar values:  $(0, n]$   
 b. negative-scalar values:  $(\infty, n)$

This is fixed-point ambidirectionality: the scale in (71a) and the one in (71b) share the same maximally informative bound.

But not all adjectives are monotonic in this way: Kennedy and McNally (2005) famously identify subtypes of adjectives, and classify them according to their scale structures. Relative adjectives do not lexicalize their standards; their standards (employed in evaluative constructions like *A is tall*) are fixed by the context of interpretation, and so their minimum potential value is bounded by zero, as diagrammed in Figure 4. Minimum-standard adjectives are adjectives that lexicalize their standard, but whose standards are also bounded by zero: in order to count as e.g. bent, something has to be somewhere on the ‘bent’ scale (these have traditionally been characterized as existential in flavor; Yoon, 1996). This makes the intervals associated with minimum-standard adjectives monotonic in just the same way that relative adjective values are; like relative adjectives, minimum-standard adjectives are unable to cooccur with modifiers like *fully* or *100%*.

In contrast, maximum-standard adjectives are diagnosable by their ability to co-occur with modifiers like *fully* or *100%* (in contrast to relative or minimum-standard adjectives).

- (72) a. A is (\*fully) tall.  
 b. A is (\*fully) bent.  
 c. A is fully straight.

This is because they lexicalize a standard—which any individual is required to exceed in order to be anywhere on the adjective’s scale—that is higher than zero. Maximum-standard adjectives therefore have a different scale structure than relative and minimum-standard adjectives (73).

- (73) **maximum-standard adjectives** are associated with non-monotonic values  
 a. positive-scalar values:  $[m, n]$   
 b. negative-scalar values:  $(\infty, n)$

As a result, relations between maximum-standard adjectives don’t exhibit fixed-point ambidirectionality. To see this, we need to consider what the negation of a maximum-standard interval looks like. Imagine a context in which a 120mL glass is considered minimally full if it has 100mL of liquid in it, and that Glass B (with a 120mL capacity) has 103mL of liquid in it. This situation

is depicted in Figure 5.

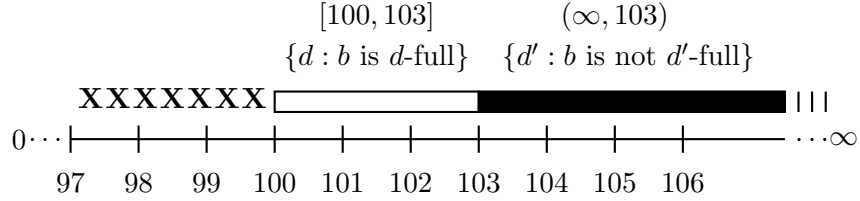


Figure 5: Negating maximum-standard adjective intervals

There are, in principle, two distinct intervals that are the complement of the interval  $[100, 103_{mL}]$ : one, depicted with the black bar in Figure 5, is the interval  $(\infty, 103_{mL})$ . The other is on the other side of our ‘full’ interval:  $(0, 100)$ , crossed out in Figure 5. This interval, crucially, does not count as a set of degrees to which B is not full, because none of these degrees count as full, i.e. are values on the ‘full’ scale in this context.

As a direct result of the non-monotonicity of maximum-standard adjectives, this account predicts that they don’t demonstrate fixed-point ambidirectionality: relating to an interval, in this case, is not equivalent to relating to its negation. The maximum bound of a negated maximum-standard adjective interval, according to (60)—the bound that is highest on the relevant scale—is  $\infty$ . Not just in this context, but in every context. Since nothing can ever be more full than  $\infty$ , this account predicts that comparatives formed from maximum-standard adjectives are trivially false, i.e. false in every context of utterance. They are uninformative, without exception.

And in fact, as a result, they are ungrammatical. (74) shows two minimum-standard adjectives in Italian comparatives; these are, as predicted, just as acceptable as expletive-negation comparatives formed with relative adjectives are.

- (74) a. Il bicchiere è più vuoto di quanto (non) lo sia l’altro.  
the glass is more empty than how-much NEG it is.SUBJ the.other  
‘This glass is more empty than the other one.’  
b. Il tubo è più curvo di quanto (non) lo sia l’altro.  
the pipe is more bent than how-much NEG it is.SUBJ the.other  
‘This pipe is more bent than the other one.’ *Italian* (Carlo DeCristofaro, p.c.)

But there is a stark contrast with the antonyms of these adjectives, as shown in (75): expletive negation is disallowed in comparatives formed with maximum-standard adjectives.

- (75) a. Il bicchiere è più pieno di quanto (\*non) lo sia l’altro.  
the glass is more full than how-much NEG it is.SUBJ the.other  
‘This glass is more full than the other one.’  
b. Il tubo è più dritto di quanto (\*non) lo sia l’altro.  
the pipe is more straight than how-much NEG it is.SUBJ the.other  
‘This pipe is more straight than the other one.’ *Italian* (ibid.)

#### 4.4 Cross-linguistic variation in comparatives

The above discussion addresses the central question: What is the interpretation of expletive negation in comparatives, and what is it about comparatives that makes expletive negation possible? Now that it’s settled, there is an important secondary question: What prohibits comparatives in other languages from licensing negation in their comparative inner arguments? This reframing pre-

supposes that a) negated inner arguments of comparatives—like putative cross-polar anomalies—are interpretable; and b) when interpretable, they are truth-conditionally equivalent to their non-negated counterparts. So why don’t all languages do this?<sup>17</sup>

A first-pass answer to this question involves the relative scarcity of explicit comparatives cross-linguistically. Explicit degree comparatives—in contrast to implicit comparative strategies, like ‘A is tall, B is not’—are available as a comparative strategy in a fraction of natural languages (Stassen, 1985; Beck et al., 2004; Kennedy, 2007). And the equivalence illustrated above between a comparative and its low-negated counterpart relies crucially on an explicit comparative morpheme, i.e., a comparative that relates two degree intervals. Especially in contrast to temporal relations, degree relations are much less prevalent across-linguistically; this is true of all degree constructions, as we’re learning (Beck et al., 2004; Bochnak, 2015). So this helps explain why much fewer languages in Jin and Koenig’s typology license expletive negation in their comparative construction than in their temporal relations: they just don’t have degree-based comparatives.

That still leaves us with a handful of languages with explicit comparatives, English among them, that don’t license expletive negation in the comparative. But there are still a few noticeable parameters to attribute the difference to, especially in terms of the formation of degree relatives. Comparatives and other temporal relations are formed from degree relatives, and there is a lot of evidence that languages vary quite a bit in a) their ability to form degree relatives; and in b) the ability of those grammatical degree relatives to be coerced to maxima. I’ll illustrate each in turn.

First, there is independent evidence of cross-linguistic variation with respect to whether or not a language forms degree relatives at all, as shown in the contrast below (Caponigro, 2004):

(76) \*A ate how much B did.

(77) A ha mangiato quanto ha mangiato B.  
 A have-3SG.PRES ate how.much have-3SG.PRES ate B  
 ‘A ate the same amount as B.’ (*lit.* ‘A ate how much B did.’) *Italian*

The two languages with attested comparative expletive negation, Italian and French, form their degree relatives with *wh*-phrases, while English does not. And it appears as though this can make a difference—even elsewhere—for the purpose of denoting a (unique, maximal) degree.

But of course, English can form degree relatives; it joins lots of languages in being able to use degree coercion to derive an ‘amount relative’ from a relative clause that transparently looks individual-denoting (Rett, 2025). Yet, even in these cases, English has a restriction on whether those degree relatives can denote maxima that other languages lack. As argued in Kotek (2011), while the English degree relative in (78a) requires an overt definite determiner to denote its maximum, the corresponding Romanian degree relative in (78b) does not.

(78) a. \*(The) 9kg that your bag weighs won’t prevent you from boarding the plane.

<sup>17</sup>A reviewer wonders if there’s a correlation between the unacceptability of cross-polar anomaly constructions in English and the unavailability of expletive negation in English. It seems as though the prohibition on cross-polar anomaly is universal, in contrast to expletive negation: Italian, for instance, which licenses expletive negation in comparatives, nevertheless doesn’t tolerate cross-polar anomaly more than English does.

(i) Maria è più alta di quanto Carlo {è / sia} (\*corto).  
 M is.3SG more tall than how-much C is.3SG / is.3SG.SUBJ short  
 (*intended:*) ‘Maria is taller than Carlo is short.’ *Italian* (Giuseppina Silvestri, p.c.)

While its cross-linguistic universality is a consideration in favor of the prohibition on cross-polar anomaly being a manner implicature (see §6.1), it unfortunately means we’ll need to look elsewhere to explain the non-universal distribution of expletive negation.



exclamatives and preference contexts, exemplified in (81) and (82) (from (39) and (34), respectively).

- (81) (Hogy) János miket el (nem) olvasott.  
 that J what.PL.ACC PRT NEG read.PST.3SG  
 ‘What things János has read!’ *Hungarian* (Halm and Huszár, 2021)
- (82) Preferiría salir con vosotros que (no) estar trabajando.  
 prefer-1sg-COND leave with you than NEG be working  
 ‘I would rather go out with you than be working.’ *Spanish* (Espinal, 2000)

As discussed in §2.2.3, low expletive negation seems to be licensed in all and only those mirative constructions that have been argued to be formed from degree relatives (Rett, 2009). In particular, a *wh*-exclamative of the form *What things János has read!* denotes either the interval corresponding to the quantity (or spookiness, or frivolity, etc.) of the things János has read, or the maximum value of that interval. Assuming the degree relatives are formed with a relative adjective (or minimum-standard adjective), we get the same fixed-point ambidirectionality for exclamatives that we saw in comparatives: a degree that is notably high on the ‘lots of things’ scale is, in the same context, necessarily notably low on the ‘not a lot of things’ scale. And while I am unaware of formal analyses of preference statements like (82), it is not hard to imagine them demonstrating the same scalar property (namely, that a preference for *m* over *n* on the positive scale is the same as a preference for *m* over *n* on its inverse scale).

While I haven’t been able to solve all of the puzzles involving expletive negation in degree constructions in every language—I don’t have the time to get into the formal-semantic literature on superlatives, and or to precisely determine the cross-linguistic differences between e.g. Italian and English—my goal has been to provide a proof of concept that we can analyze so-called expletive negation as we do standard negation, and that when we do this, in scalar constructions that relate informative bounds, we can explain why it doesn’t impact the truth conditions. And we can explain why this happens with scalar constructions in particular.

Degree relations were a good place to begin this proof of concept because concepts like scalarity and order-sensitive maximality have been the bread and butter of constructions like the comparative for decades now, and implementing them to discuss expletive negation is relatively straightforward. But, as we’ve seen, degree relations are much less represented in the typology of expletive-negation licensors than temporal relations, so the success of the present proposal—precisely because it can’t straightforwardly account for cross-linguistic variation without supplementation—relies at least in part on its ability to be generalized to other constructions (and languages). This is the subject of the next section.

## 5 Expletive negation in temporal relations

An additional challenge posed by expletive negation in temporal relations is that they do exhibit an antonymic asymmetry: expletive negation is licensed by ‘before’ across languages (and ‘until’ and ‘since’), but never ‘after’. I’ll extend the characterization of fixed-point ambidirectionality to temporal relations in this section, and give an for this asymmetry, pertaining to the coercion mechanisms at play in temporal relations that are absent in degree relations. I’ll begin by presenting a background semantics for these temporal relations (and their pretty robust context-sensitivity).

## 5.1 A background on ‘before’ and ‘after’

There are a lot of attested differences between ‘before’ and ‘after’ above and beyond the licensing of expletive negation. ‘Before’, but not ‘after’, has a veridicality ambiguity or underspecification (Anscombe, 1964), as illustrated in (83); this means that while (83b) entails that Mozart finished the Requiem, (83a) does not.

- (83) a. Mozart died before he finished the Requiem.  $\nrightarrow$  Mozart finished the Requiem.  
b. Mozart died after he finished the Requiem.  $\rightarrow$  Mozart finished the Requiem.

Additionally, ‘before’, but not ‘after’, licenses NPIs, as in (84):<sup>18</sup>

- (84) a. Alec left the party before anyone else arrived.  
b. \*Alec left the party after anyone else arrived.

Both ‘before’ and ‘after’ constructions exhibit ambiguity, but in different environments (Heinämaa, 1974; Rett, 2020a). ‘Before’ constructions are ambiguous when the embedded verbal event is telic, and unambiguous otherwise; ‘after’ constructions are ambiguous when the embedded verbal event is atelic, and unambiguous otherwise. These generalizations are illustrated in (85) and (86).

(85) **unambiguous ‘before’ and ‘after’ sentences**

- a. *before* + atelic embedded event (EE):  
*John met Mary before she was president.*  $\prec$  initial  
b. *after* + telic EE:  
*John met Mary after she climbed the mountain.*  $\succ$  final

(86) **ambiguous ‘before’ and ‘after’ sentences**

- a. *before* + telic EE:  
*John met Mary before she climbed the mountain.*  $\prec$  initial,  $\prec$  final  
b. *after* + atelic EE:  
*John met Mary after she was president.*  $\succ$  initial,  $\succ$  final

Specifically, (85a) can only be true iff John met Mary before she started being president, while (86a) is ambiguous between describing a situation in which John met Mary before she started climbing the mountain, and before she summited the mountain. In contrast, (85b) can only be true iff John met Mary after she summited the mountain, while (86b) is ambiguous between describing a situation in which John met Mary before she started being president, and in which John met Mary after she ceased being president.

The key to explaining this semantic variation is embracing independent evidence that VPs can be coerced in certain contexts (de Swart, 1998). In particular, stative or atelic VPs can be coerced into denoting their starting points (‘inchoative coercion’, Dölling 2014):

- (87) a. Gary was surprised. *stative*  
b. Gary was surprised when Anna paid the check. *inchoative*

<sup>18</sup>Note that neither ‘until’ nor ‘since’ license NPIs in their argument, which further breaks the correlation between the licensing of expletive negation and NPI-licensing.

- (i) a. \*Alec danced until anyone else arrived.  
b. \*Alex has been dancing since anyone else arrived.

(88) **inchoative coercion:**<sup>19</sup>

If  $VP$  is a process with duration  $T$ ,  $VP$  can denote  $T$  or  $\text{GLB}(T)$ , where  $\text{GLB}(T) = \iota t[t \in T \wedge \forall t' \in T[t \preceq t']]$

And telic VPs can often be coerced into denoting their endpoints (‘completive coercion’; Dölling 2014), perhaps because they make the endpoint salient in a way that atelic VPs do not:

- (89) a. Matt climbed the mountain. *accomplishment*  
b. Matt climbed the mountain at seven o'clock sharp. *semelfactive / telos*

(90) **completive coercion:**

If  $VP$  is a culmination with duration  $T$ ,  $VP$  can denote  $T$  or  $\text{LUB}(T)$ , where  $\text{LUB}(T) = \iota t[t \in T \wedge \forall t' \in T[t \succeq t']]$

Rett (2020a) uses these coercion processes—and what we know independently about what sorts of VPs can trigger them—to derive the truth conditions in (85) and (86) by appealing to these coercion processes. From this perspective, we can think of temporal relations, just like comparatives, as relating the most informative point of their embedded argument in a given context. For ‘before’, this is the earliest bound; for ‘after’, this is the latest bound. These temporal relations are defined in this context-sensitive way in (91).

- (91) a.  $\llbracket A \text{ before } B \rrbracket = \exists t \in A[t >_- \text{MAX}(B)]$   
b.  $\llbracket A \text{ after } B \rrbracket = \exists t \in A[t >_+ \text{MAX}(B)]$

To be clear, ‘before’ in (91) is associated with the same sort of ordering as ‘shorter’—the negative-valency one—because e.g. 1pm is higher on the ‘before’ scale than 2pm. In this way,  $>_-$  corresponds to temporal precedence,  $<$ . And ‘after’ is associated with the positive valency ordering, corresponding to temporal succession ( $>$ ) for the opposite reason. I’ll use the familiar  $<$  and  $>$  when characterizing truth conditions, for ease of reading, and  $>_{+/-}$  when deriving them.

Also: there will be a clear parallel between the temporal relations in (91) and the degree relations from §4. Specifically, while ‘before’ and ‘after’ lexicalize the difference between  $>_-$  and  $>_+$ , respectively, maximal informativeness is still scale-sensitive, which is to say, the ordering on which  $\text{MAX}$  is calculated has to do with B’s ordering. While event descriptions don’t have antonyms, we can negate event descriptions. And when we do, we expect  $\text{MAX}_-$  to flip to  $\text{MAX}_+$  (and vice versa).

The predicted truth conditions for these constructions are illustrated in Table 2. There are four readings ((i), (ii), (v) and (vi)) that arise as the result of the relations in (91) straightforwardly applying to the temporal interval associated with the embedded event: the initial reading of  $A \text{ before } B$  (which relates  $A$  to the most informative ‘before’ bound of B’s runtime, whether B is atelic (i) or telic (ii)); and the final reading of the sentence  $A \text{ after } B$  (which relates  $A$  to the most informative ‘after’ bound of B’s runtime, whether B is atelic (v) or telic (vi)).

|                       | <b>atelic EE</b>                    | <i>example</i> | <b>coercion?</b> | <b>telic EE</b>                       | <i>example</i> | <b>coercion?</b> |
|-----------------------|-------------------------------------|----------------|------------------|---------------------------------------|----------------|------------------|
| $A \text{ before } B$ | (i): $<$ initial                    | (85a)          |                  | (ii): $<$ initial<br>(iii): $<$ final | (86a)          | completive       |
| $A \text{ after } B$  | (iv): $>$ initial<br>(v): $>$ final | (86b)          | inchoative       | (vi): $>$ final                       | (85b)          |                  |

Table 2: truth conditions of ‘before’ and ‘after’ sentences (Rett, 2020a)

<sup>19</sup>In these definitions, GLB stands for ‘greatest lower bound,’ and LUB stands for ‘least upper bound’ (the supremum).

The other two readings are the result of coercion. When the embedded B event is atelic, it can be coerced into denoting its starting point (e.g., the temporal interval [1pm, 3pm] can be coerced into the point, or degenerate interval [1pm, 1pm]). This is redundant coercion in ‘before’ sentences, for which starting points are already the most informative. But it makes a difference in ‘after’ sentences with atelic embedded events, resulting in the ‘after the starting point’ reading in (iv) in Table 2. On the other hand, when the embedded event is telic, it can be coerced into denoting its endpoint. This is a redundant coercion in ‘after’ sentences, for which endpoints are already the most informative. But it makes a difference in ‘before’ sentences (with telic embedded events), resulting in the ‘before the endpoint’ reading in (iii).

The definitions in (91) involve coercion to maxima or suprema, as in some previous accounts (e.g. Beaver and Condoravdi, 2003; Krifka, 2010a), but they are capable of predicting the full spectrum of truth conditional possibilities of these temporal relations (without any additional operators like EARLIEST) because the calculation of maxima is scale-sensitive, as it was for degree relations. Note that there is one important way these coercion operators differ from the definition of the maximality operator in (60). MAX returns a supremum, the most informative bound of an interval, regardless of whether or not that point is included in the interval (whether it’s an open or closed bound). But these coercion operators are not scale sensitive: they care about starting points and endpoints. And complete coercion, in particular, is only defined for telic events (events with *telo*).

## 5.2 Negating temporal relations

I began the section on expletive negation in comparatives by noting that embedded negation in English comparatives is ungrammatical, but that our theories of negation and degrees nevertheless predict what such constructions would mean. We can do the same thing here, for temporal relations.

As already discussed, it’s a common assumption that the syntactic arguments of ‘before’ and ‘after’ are event-denoting; that those events are associated with their temporal runtimes via coercion or some null operator, like Davidson’s (1969)  $\tau$  operator; and that ‘before’ and ‘after’ are temporal relations. But what does it mean for a negated clause to denote a negative event? There are some instances where the notion has come in handy, for sentences like *Tom’s failing to pass the test was disappointing* or *I saw Mary not leave*. This question has just started getting addressed in the literature, such as in Bernard and Champollion (2023), who analyze verbal or event negation as effectively set complementation (of events).

But what’s the runtime of a negative event? Consider the sentences in (92). The embedded telic VP construction in (92a) can either mean that Jiyoung didn’t start climbing the mountain, or that she didn’t finish climbing the mountain.

- (92) a. Jiyoung didn’t climb the mountain.  
b. Jiyoung wasn’t president.

And in an out-of-the-blue context, (92b) most naturally means that Jiyoung didn’t start being president, but it’s easy enough to get a different interpretation in a different context (e.g. *Jiyoung wasn’t president when she took the bribe*).<sup>20</sup>

<sup>20</sup>Altshuler et al. (2026) observes that negative imperatives, apparently cross-linguistically, prohibit “the addressee from any participation in the event”, not just from completing the event.

- (i) a. Don’t open your mouth!  
b. Don’t read that book!

They attribute this to the ‘branching times’ metaphysics that is widely adopted across formal semantics: the idea that the past is inherently determinate, while the future is inherently indeterminate. This notion underpins the

This flexibility of interpretation is consistent with the *a priori* tendency for events to have runtimes that are meaningfully bounded on both ends, i.e. their runtimes are not monotonic, like the scales associated with maximum-standard adjectives discussed in §4.3. That means that a given event, assuming it occurred, has an inverse runtime that precedes it, and an inverse runtime that succeeds it. These are represented respectively in Figure 6 by ①—the temporal interval  $(-\infty, 1\text{pm})$ —and ②, the temporal interval  $(3\text{pm}, \infty)$ .

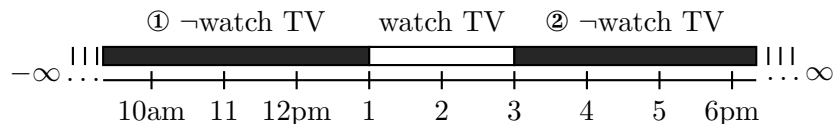


Figure 6: Negating event runtimes

Which of these are available as targets of embedded negation in temporal relations? The answer is both. One inverse interval, the one labeled ②, amounts to a standard negation interpretation. The other one (①) amounts to an expletive negation interpretation. Temporal relation constructions in expletive negation languages can receive either interpretation, but those in non-expletive-negation languages can only receive one. I’ll begin this section by outlining the semantics for the standard negation reading, and then I’ll move on to discuss the expletive negation readings.

Crucially, negation isn’t disallowed in *before*-clauses in English: the sentences in (93), culled from the internet, all presuppose that B happened (for an event B described by the embedded VP), and relate the matrix event to the endpoint of *e*.<sup>21</sup> (93a) and (93b) both explicitly assert (in the matrix clause) that B happened, and use the ‘before’ clause to mark the stopping point of the event. (93c) presupposes that B happened, and specifies that the speaker’s purchase of the item temporally precedes them ceasing to sell them.

- (93) a. Dinosaurs lived 100 million years, before they didn’t.  
b. Trump liked me before he didn’t.  
c. Thank god I got the first one before they didn’t sell them anymore.

In other words, in English, a sentence of the form ‘A before NEG B’ is unambiguously interpreted as ‘A before B stopped’. Embedded negation in *before*-clauses in English unambiguously contend

now-standard view that future marking is necessarily modal (Klecha, 2014; Winans, 2016); both Phillips (2025) and Altshuler et al. (2026) argue that verbal negation is an irrealis marker.

<sup>21</sup>There’s an ancillary use of negation in these contexts: rather than targeting the runtime, it can contribute to event reference, in particular the specific, bounded event of someone not doing something, illustrated in the naturally occurring examples in (i). I’ll ignore this reading here because it involves a different use of negation than the one investigated here.

- (i) a. He made that announcement a couple of hours before he didn’t attend a public forum.  
b. This delivery driver refused to give the customer their food after they didn’t tip her.

Interestingly, this seems to be the only reading available for temporal-relation negation in Italian; it’s been reported that negated ‘before’ constructions in Italian presuppose that the relevant event did not occur (only in “*prima*-clauses which are assumed to be false in the world of context”; Prete 2008:162). This means that a sentence like (ii)—which presupposes that the event did happen—are unacceptable with this use of negation.

- (ii) Mio padre è nato prima che (\*non) nascesse mia madre.  
my father is.3SG born before that NEG born.3SG.PAST my.FM mother  
(intended:) ‘My father was born before my mother was born.’ Italian (Delfitto et al., 2019)

This makes Italian (and the use in (i)) different from both the interpretation of standard temporal negation in ‘before’ clauses as well as expletive negation in ‘before’ clauses.

with the negated interval ② from Figure 6.

We can formally derive the semantics for English negated *before*-clauses pairing this assumption—the runtime of negated events in English can only refer to the succeeding interval, not the preceding interval—with the basic semantics for ‘before’ introduced in §5.1, plus the assumption that these negative events, too, are subject to coercion.

Assuming that event negation returns the succeeding interval, our semantics predicts two in-principle readings for a sentence like *A happened before B didn’t*, as shown in (94): a non-coerced interpretation and, because the negated event is atelic, a reading involving inchoative coercion (coercion from the interval to its starting time). The account in Rett (2020a) takes for granted that inchoative coercion is in principle always available to atelic predicates, but it only came into play for the core ‘before’ and ‘after’ data in §5.1 in ‘after’ constructions, because inchoative coercion was redundant for ‘before’ constructions with non-negated embedded arguments. Note that completive coercion is unavailable to the negative event, because it isn’t telic (it doesn’t have an endpoint).

These two potential readings are illustrated in (94) for a context in which A happened at 11am, and B happened between 1pm and 3pm. *Before* relates to the scale-sensitive maximal bound of its embedded argument; since negation reverses the scale ordering, this amounts to  $\text{MAX}_+$ , or the most ‘after’ argument. When the interval isn’t coerced, as in (i), this amounts to a reading that is trivially true: absolutely any point in time exists before  $\infty$ , so the reading is universally uninformative (and, presumably, unavailable as a result).

- (94) *context: A happened at 11am, B happened from 1-3pm*  
 $\llbracket \text{A before NEG B} \rrbracket = 11\text{am } \downarrow_{-} \text{MAX}_+(3\text{pm}, \infty)$   
 (i) **non-coerced reading:**  $11\text{am } \downarrow_{-} \infty$  TRIVIAALLY TRUE OR UNAVAILABLE  
 (ii) **coerced reading** (*inchoative*):  $11\text{am } >_{-} 3\text{pm}$

But when the (stative) negative event undergoes inchoative coercion, as in (ii), we get a viable reading, in which A is positioned linearly prior to the starting point of the negative interval, which amounts to the endpoint of the event. When we only consider the ② interval, ‘A before NEG B’ can only receive the reading ‘A before B ended,’ which is what we see in the English sentences in (93).

Going forward, I’ll refer to this as the ‘standard negation’ reading, because negation in this English construction is not characterized as expletive, and it has a truth-conditional impact on the sentence, as illustrated in (95):

- (95) a. I got the first one before they sold them.  
 b. I got the first one before they didn’t sell them.

While (95a) positions the matrix event with respect to the starting point of the embedded event (the selling), (95b) positions the matrix event with respect to the ending point of the embedded event.

In sum, English is not an expletive-negation language when it comes to temporal relations (or any construction, for that matter). But this doesn’t mean that negation is prohibited from (the internal argument of) temporal relations in English, and it turns out that we can account for the negated English examples—the interpretation of standard negation in temporal relations—by observing that it unambiguously targets one of the two logically possible temporal inverses of the embedded event (specifically, interval ② in Figure 6). As a result, English ‘before’ constructions with embedded negation entail that the embedded event didn’t happen, or ceased to happen.

In the next subsection, I show that expletive-negation languages—which can also receive a standard-negation interpretation—are those in which embedded negation in a temporal relation can target the preceding inverse interval ① as well as the succeeding inverse interval ②. In §5.4 I

show that none of these assumptions are enough to license expletive negation in ‘after’ constructions, so we can nevertheless explain the antonymy asymmetry we have observed in expletive-negation-licensing in temporal relations.

### 5.3 Expletive negation in ‘before’ constructions

Recall that, when B denotes a telic event, ‘before B’ is in-principle ambiguous between a reading that relates to B’s starting point and one that relates to B’s endpoint. Imagine again a context in which A happened at 11am, and B happened between 1pm and 3pm. From the point of view of the ‘before’ ordering, given our convention of writing intervals with the lower bound on the left, this interval is [3pm, 1pm]: 1pm is more informative on the ‘before’ scale than 3pm is. (96) shows the predicted truth conditions for the non-negated sentence ‘A happened before B’.

- (96) *context: A happened at 11am, B happened from 1-3pm*  
 $\llbracket A \text{ before } B \rrbracket = 11\text{am} >_{-} \text{MAX}_{-}([3\text{pm}, 1\text{pm}])$   
 (i) **non-coerced reading:**  $11\text{am} >_{-} 1\text{pm}$  TELIC OR ATELIC  
 (ii) **coerced reading** (*completive*):  $11\text{am} >_{-} 3\text{pm}$  TELIC ONLY

In contrast, (97) shows the predicted truth conditions for the negated sentence ‘A happened before B didn’t’ in which the negation returns the preceding inverse interval ①. This interval is bounded on one end by  $-\infty$  and the other end by 1pm, but because its ordering is reversed, 1pm is now the most informative bound. Importantly, completive coercion is no longer available, because the negative event  $(-\infty, 1\text{pm})$  doesn’t have an endpoint. But inchoative coercion is in-principle available, as it was for standard temporal relation negation in (94), and that reading is shown in (ii).

- (97) *context: A happened at 11am, B happened from 1-3pm*  
 $\llbracket A \text{ before NEG } B \rrbracket = 11\text{am} >_{-} \text{MAX}_{+}((-\infty, 1\text{pm}))$   
 (i) **non-coerced reading:**  $11\text{am} >_{-} 1\text{pm}$  TELIC OR ATELIC  
 (ii) **coerced reading** (*inchoative*):  $11\text{am} >_{-} -\infty$  TRIVIAALLY FALSE OR UNAVAILABLE

The negated and non-negated sentences share one reading, (i): both have a non-coerced reading that relates A to 1pm, because 1pm is the most informative bound for both the positive and negative temporal intervals. This is fixed-point ambidirectionality: there is a context (one that doesn’t involve completive coercion) in which the sentences ‘A before B’ and ‘A before NEG B’ are truth-conditionally equivalent, because they share a common informative bound.

In contrast to the non-negated version, the negated version of (97) doesn’t have a second reading: completive coercion is unavailable to the atelic negated event, and inchoative coercion returns a trivially false statement (that A precedes  $\infty$ ). Assuming trivial falsehood renders a reading unavailable, the prediction here is that expletive negation in ‘before’ constructions—negation that targets the preceding inverse interval ①—is possible and equivalent to its non-negated counterpart, but crucially for only one of the interpretations available to telic embedded events.

Remarkably, this is what we see; Cépeda (2018) observes that ‘before’ constructions with expletive negation target the starting point in French and Catalan (see also Tahar, 2021).

- (98) Olga mangera son déjeuner avant qu’elle ne regarde la télé.  
 O eat-3SG.FUT her lunch before that-she NEG watch-3SG.SUBJ the TV  
 ‘Olga will have lunch before she watches TV.’ **starting point only**; *French* (Cépeda, 2018)

- (99) Abans que no et vegin, vés-te'n.  
 before that NEG you see.SUBJ go-CL-from.here  
 ‘Before they see you, you should go.’ **starting point only**; *Catalan* (Cépeda, 2018)

This is one of the very subtle ways in which it’s strictly-speaking incorrect to characterize low expletive negation as truth-conditionally unimpactful (a few other ways are discussed in §6.1), and it is compelling evidence that expletive negation is interpreted semantically, rather than being a morphosyntactic reflex. The data in (98) and (99) provide additional evidence for this account in particular: one that harnesses the independently-observed scale-sensitive notion of maximality, encoded in these scalar relations, as well as observations about the ability of events to undergo coercion.

In the next section, I show why, even given these assumptions, expletive negation is unavailable in ‘after’ constructions.

#### 5.4 Expletive negation prohibited from ‘after’ constructions

Consider a context in which A happened at 4pm, and B happened from 1-3pm. The non-negated temporal relation in (100) requires that A happen after the most informative bound on the ‘after’ scale. When the embedded event B is associated with its full runtime, a temporal interval, this amounts to a requirement that A succeed the endpoint of B (the reading in (100):(ii)). When the embedded event is atelic and we are in a context that supports inchoative coercion, B can instead denote its starting point, and ‘A after B’ can mean that A succeed the starting point of B (the reading in (100):(i)). This is a demonstration of the prediction that ‘A after B’ is interpretable and ambiguous.

- (100) *context: A happened at 4pm, B happened from 1-3pm*  
 $\llbracket \text{A after B} \rrbracket = 4\text{pm} >_+ \text{MAX}_+([1\text{pm}, 3\text{pm}])$   
 (i) **non-coerced reading**:  $4\text{pm} >_+ 1\text{pm}$   
 (ii) **coerced reading** (*inchoative*):  $4\text{pm} >_+ 3\text{pm}$  TELIC ONLY

Things change when we add embedded negation in (101) (again assuming the preceding inverse interval ①). Recall that the ordering is reversed on the negated argument; 1pm is less informative than  $-\infty$  on the ‘before’ scale. The non-coerced reading in (i) is trivially true and presumably unavailable: it requires that A occur after  $-\infty$ , which is true for any event.

- (101) *context: A happened at 4pm, B happened from 1-3pm*  
 $*\llbracket \text{A after NEG B} \rrbracket = 4\text{pm} >_+ \text{MAX}_-([1\text{pm}, -\infty])$   
 (i) **non-coerced reading**:  $4\text{pm} >_+ -\infty$  TRIVIAALLY TRUE OR UNAVAILABLE  
 (ii) **coerced reading** (*inchoative*):  $4\text{pm} >_+ -\infty$  TRIVIAALLY TRUE OR UNAVAILABLE

In principle, as with ‘before’, we can consider the possible role of inchoative coercion, because the negated embedded event is atelic, i.e. lacks a telos. This reading is demonstrated in (ii): crucially, it is truth-conditionally identical to the reading in (i), and is therefore trivially true. Recall the negated comparatives formed from maximum-standard adjectives in §4.3: these constructions were ungrammatical because they were (unambiguously) trivially false. The same sort of explanation should be extended to ‘after’ constructions with expletive negation: they are ungrammatical because they are intrinsically uninformative. This seems especially egregious considering they are marked with respect to their non-trivially-true counterpart (§6.1).

In other words: coercion doesn’t meaningfully contribute to the interpretation of expletive

negation constructions regardless of the polarity of the relation (‘before’ or ‘after’). But, assuming that expletive negation targets the preceding inverse interval ①, the difference between ‘before’ and ‘after’ is that only the former returns a meaningful non-coerced interpretation.<sup>22</sup> Expletive negation doesn’t occur in ‘after’ constructions because its contribution torpedoes the truth conditions of a sentence, rendering the construction meaningless. This is due not to any syntactic difference between ‘before’ and ‘after’, but because an event’s runtime shares a meaningful endpoint on the ‘before’ scale—but not the ‘after’ scale—with the inverse interval ①.

## 5.5 Cross-linguistic variation in temporal relations

It’s relatively easy to explain why temporal relations (and ‘before’ in particular) are so well-represented in the cross-linguistic list of expletive negation environments (Table 1): while explicit comparatives are rare, temporal relations are not. Degrees on the whole, in fact, are relatively rare across languages (Bochnak, 2015), but the representation of times is significantly more common, if not universal (Tonhauser, 2011).

As before, the goal of this paper is to provide an explanation for which constructions have the potential to license low expletive negation cross-linguistically, and which do not. The claim here is that expletive negation is licensed wherever we see semantic ambivalence, and a common and systematic subspecies of semantic ambivalence is fixed-point ambidirectionality, instantiated by many (but not all) scalar relations. And if a language does not have these relations in its inventory—as is the case for most languages and the explicit comparative—we predict that that language does not license expletive negation in those constructions.

In the previous section, on degree relations, I suggested that what was at play were language-specific semantic parameters regarding whether a degree relative can be coerced into its maximum, and we saw independent evidence that English differs from expletive-negation languages like Italian in this respect. There is a slightly clearer cross-linguistic parameter at play in the case of temporal relations: in temporal relations, expletive-negation languages are languages that interpret a negated runtime as either the preceding inverse temporal interval or the succeeding inverse temporal interval, while non-expletive-negation languages only use the latter. This doesn’t appear to have anything to do with how negated events are interpreted outside of these temporal relations—as (92) showed, there seems to be an in-principle flexibility in English—but it does seem to be a consistent difference between the two. And while there is a sense in which this amounts to a restatement of the facts, it’s a very plausible explanation of what a language-learner learns when they learn English, or French: when negation is licensed in the embedded event of a temporal relation, it can be associated with one of two denotations, or it is ambiguous between those two denotations. In this sense, there is a parallel between the proposed language-specific parameters at play with degree relations (coerceability to maxima) and those involved in temporal relations.

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<sup>22</sup>The fourth and final configuration available to this theory is a use of ‘after’ with standard negation, i.e. with negation targeting the succeeding inverse interval ②. Both potential readings of these constructions (the non-coerced reading and the reading with inchoative coercion) returns the same reading: after the endpoint of B (after 3pm in the context above). But crucially, because ‘after’ is veridical, these constructions presuppose that the event didn’t occur, making them the same as the constructions in footnote 21. ‘Before’ constructions with standard negation have an additional non-veridical reading.

## 5.6 Extensions to other temporal relations

### 5.6.1 Expletive negation in ‘until’ but not ‘while’

Recall from Section 2.2.1 that expletive negation is licensed by ‘until’ in many languages. ‘Until’ is semantically just like ‘before’ in that it requires its first argument to temporally precede its second.

- (102) a. Matt danced before Danny sang.  
b. Matt danced until Danny sang.

Unlike ‘before’, ‘until’ requires that its matrix argument be a durative event (instead of a punctual event, e.g. *\*Matt fell asleep until Danny sang*, Mittwoch 1977; de Swart 1996; Condoravdi 2008). It targets the endpoint of the matrix event A, but like ‘before’, ‘until’ can relate (the endpoint of) A to either the starting point or endpoint of B, if B is a telic event.

- (103) Colin sang until Kelsey wrote her paper.

An informal survey of English speakers confirms that (103) can truthfully characterize a situation in which Colin stopped singing when Kelsey started writing her paper (perhaps, to give her a quiet work area) or one in which Colin stopped singing when Kelsey finished writing her paper (perhaps, somehow, as motivation for her to finish). This demonstrates that telic event arguments embedded under ‘until’ are subject to the same endpoint coercions as they are for ‘before’.

Based on the treatment of other temporal relations in Section 5, then, we get this definition for the meaning of *until* (ignoring the presupposition that requires *A* be durative):

- (104)  $\llbracket A \text{ until } B \rrbracket = \text{LUB}(A) <_- \text{MAX}(B)$

It differs from the definition of ‘before’ in (91b) only in its treatment of the matrix event.<sup>23</sup> Because only the embedded temporal argument is at play in expletive negation, we expect ‘until’ would be have exactly like ‘before’ in all relevant respects. We therefore predict that ‘until’ has all of the capability to host expletive negation that ‘before’ has (and vice versa), modulo language-specific morphosyntactic restrictions on the appearance of negation in the embedded clauses of temporal relations. Notably, Cépeda (2018) (p71-73) argues that expletive negation ‘until’ constructions in Spanish have the same telicity-based disambiguation as do the ‘before’ constructions in (98) and (99).<sup>24</sup>

Interestingly, expletive negation is not licensed in ‘while’ constructions, in any language. Unlike any of the temporal relations we’ve examined until now, ‘while’ requires not just overlap but total overlap between the temporal intervals associated with each of its event arguments. Crucially, if the runtime of *A* totally overlaps with the runtime of *B*, the runtime of *A* will not totally overlap with the runtime of  $\neg B$ . So this account predicts the universal inability of ‘while’ constructions to license expletive negation.

This prediction is exemplified beautifully in Hungarian, which employs a single word for ‘until’

<sup>23</sup>A reminder that  $\text{LUB}(T) = \iota t[t \in T \wedge \forall t' \in T[t \succeq t']]$ . I’ve characterized ‘until’ in terms of its upper bound for this argument because it seems to always relate the endpoint of *A* (and *A* is unreversible by antonymy or negation).

<sup>24</sup>Specifically, (i) “is compatible with a finished reading only. [...] This sentence can only mean that Olga will leave after Daniela has finished singing the national anthem. [...] This characterization of a sentence with [expletive negation] makes it different than a sentence without [expletive negation]” (Cépeda, 2018, 73).

- (i) Olga no se irá hasta que Daniela no llegue a casa.  
O NEG CL will.go until that D NEG arrives.SUBJ to house  
‘Olga won’t leave until Daniela arrives home.’

*Spanish*

and ‘while’. (105a), the construction without expletive negation, is ambiguous between an ‘until’ interpretation and a ‘while’ interpretation. (105b), its counterpart with embedded negation, can only receive an ‘until’ interpretation.

- (105) a. A gyereke sírtak, amíg az anyjuk el sétált.  
 the children cry-3PL.PST AMIG the their.mom away walk-3SG.PST  
 ‘The children cried until their mom walked away.’ **OR**  
 ‘The children cried while their mom walked away.’  
 b. A gyereke sírtak, amíg az anyjuk el nem sétált.  
 the children cry-3PL.PST AMIG the their.mom away NEG walk-3SG.PST  
 ‘The children cried until their mom walked away.’ *Hungarian* (János Egressy, p.c.)

Privoznov (2022) observes something similar in Russian: *poka* can mean (‘when’ or ‘while’) in many contexts, as demonstrated in (106).

- (106) Osa my-l posudu, poka Marina š-l-a domoj.  
 O wash.IMP-PST.M dishes, while M walk.IMP-PST.F home  
 ‘Osa was washing the dishes while M was walking home.’ *Russian* (Privoznov, 2022, 6)

It can also have a ‘before’ or ‘until’ interpretation, but those interpretations are conditioned by two factors: embedded (expletive) negation, and the aspect of the embedded verb. Specifically, *poka* can mean ‘until’ as long as there is embedded (expletive) negation, and when the embedded event is perfective.<sup>25</sup>

- (107) a. Osa zvonil Marine, poka ona #(ne) uš-l-a.  
 O call.IMP-PST.M M while she #(NEG) leave.PFV-PST-F  
 ‘Osa was calling Marine until she left.’  
 b. Osa pozvonil Marine, poka ona #(ne) uš-l-a.  
 O call.PFV-PST.M M while she #(NEG) leave.PFV-PST-F  
 ‘Osa called Marine before she left.’ *Russian* (Privoznov, 2022, 8)

Privoznov observes that the negation is low, and that, despite the negation, these constructions entail that the embedded event occurred (in the parlance of the literature on ‘before’ and ‘after’, the constructions are both veridical).

This account predicts that this is because ‘until’ is ambidirectional in its embedded argument, but ‘while’ is not, the former but not the latter has the potential to license expletive negation. Note that Cépeda’s account, which predicts expletive negation is licensed wherever an operator allows overlap, would incorrectly predict that ‘while’ licenses expletive negation (at least, according to this semantic characterization of ‘while’).

### 5.6.2 Expletive negation in ‘since’ constructions

Expletive negation has been reported in the embedded argument of ‘since’ constructions in a handful of languages. We find expletive negation in two distinct types of ‘since’ constructions; I’ll discuss them each in turn. The first type is the most familiar given our discussion of other temporal relations, and is exemplified in Catalan ((108), from (28)).

- (108) Quantes mentides (no) deu haver dir des quen estem casats!  
 how.many lies not must.3SG have told since that are.1PL married

<sup>25</sup>Thanks to Tanya Bondarenko (p.c.) for introducing me to these data and this phenomenon.

‘(S)he must have told so many lies since we got married!’ *Catalan* (Espinal, 2000)

I’ll call these event-based ‘since’ constructions, because in them, ‘since’ seems to really be relating the matrix event A, which is always interval-denoting, to the embedded event B, which is always punctual.

In these event-based ‘since’ constructions, the punctual event B is associated with a single point in time, and that point in time marks the starting point of the matrix event A. ‘Since’ is deceptively like ‘after’ in this respect: both appear to require that B happen before A. But this is only apparent; what ‘since’ really does is require that B mark the starting point of A. Because B is necessarily point-denoting, we get an easy prediction of the licensing of expletive negation, given the assumptions in the previous subsection.

Imagine Olga got the job at noon on May 12, 2015. This means that  $\neg B$ —the pre-event complement interval to B—is  $(-\infty, 12\text{pm})$ , an interval with an informative bound of noon. Given that *since* requires that its embedded argument be punctual (i.e. denote a single point in time, instead of an interval) this argument will always be coerced into its most informative endpoint, which will be the only informative bound (noon) in any context. As a result, we predict that ‘since B’ will be equivalent to ‘since  $\neg B$ ’.

The second type of ‘since’ construction doesn’t appear to relate two events, but instead uses the matrix argument to measure an event bounded by the embedded argument. This is exemplified in (112) (from (27)) for Korean; the discussion in (Cépeda, 2018) suggests that this is the only type of ‘since’ construction that allows expletive negation in Korean.

- (109) Malia-ka nolay-lul (an) pwulu-nci olay toyesta.  
M-NOM song-ACC NEG sing-since long.time became  
‘It has been a long time since Maria sang a song.’ *Korean* (Cépeda, 2018, 162)

In (112), there is one and only one salient event, the event of Maria singing a song; the truth conditions imposed by the sentence measure the length of time from the end of that event to the speech time. (If we instead consider the more precise *It has been two minutes since Maria sang a song*, this endpoint requirement becomes more clear; the timer would have to have started as soon as she stopped, not as soon as she started singing.)

I won’t offer a specific analysis of ‘since’ in these constructions, but it should be clear that this ‘since,’ too, requires that its embedded argument be associated, at least at some level, with a single point in time. In the non-negated version, this amounts to the endpoint point of the embedded event B; in the negated version, this amounts to the only informative endpoint of the pre-event temporal complement interval, which will be the same as (or effectively equivalent to) the endpoint of B.

## 6 Extensions and open questions

In this section, I discuss three further aspects of low expletive negation, and how they relate to the present proposal. The first—various attested extra-truth-conditional meanings—is easily addressed with a standard theory of manner implicature (§6.1). The other two sections provide speculative extensions of the theory, first to an account of embedding verbs (§6.2) and then to address the question of NPI licensing (§6.3).

## 6.1 The role of manner implicature

Manner implicatures arise when two truth-conditionally equivalent constructions differ in their morphological markedness (Grice, 1975; Horn, 1991). In such situations, the more marked construction is associated with the manner implicature, some version of the Marked Meaning Principle (Rett, 2020b): informally, marked forms are associated with marked meaning. Two cases of manner implicature are in the (b) examples of (110) and (111).

- (110) a. He killed the sheriff.  
       b. He caused the sheriff to die. (Katz, 1972)
- (111) a. I was aware of the problem.  
       b. I was not unaware of the problem. (Horn, 1991)

Rett (2020b) argues that manner implicatures generally have the form ‘ $[\phi]$  is atypical’, for  $\phi$  the marked form in the construction. Because conversational implicatures are calculable, what counts as atypical is form-specific: a marked gradable adjective meaning will involve a different kind of atypicality than a marked VP meaning (see especially Lippard and Langa da Câmara, 2026). In (110b) this implicature amounts to ‘the manner of killing was atypical’, i.e. indirect; in (111b) it amounts to ‘the awareness is atypical,’ which means it is either high or low on the scale, as argued in Horn (1991).

Constructions with low expletive negation are—by definition—constructions that involve an additional morpheme that does not make a truth-conditional impact.<sup>26</sup> If manner implicature is a true and systematic phenomenon, given that low expletive negation is spurious and optional, we would expect to see manner implicatures associated with expletive negation constructions. And in fact, there are broad and diverse reports that they are. This is predicted by the present theory, but also by any theory that treats expletive negation as anything other than (obligatory) feature agreement.

There are consistent reports, across constructions, that expletive negations differ from their non-negated counterparts in indicating that “there is a bit of uncertainty or indefiniteness” (Napoli and Nespore, 1976, 64) or that the speaker is distancing themselves from the truth or likelihood of the embedded proposition (Yoon, 2022). This has been reported for negative verbs in Korean (112) (which lead Yoon (2022) to analyze expletive negation as explicitly encoding negative anticipation); Japanese negative embedding verbs (113); and comparatives in Italian (114). While no one has argued that this is part of the asserted content, this unlikelihood implication does impact felicity conditions, as indicated in (114).<sup>27</sup>

- (112) John-un Mary-ka oci-anh-ul-ci                    kekcegha-koissta.  
       J-TOP    M-NOM   come-NEG-FUT-COMP fear-ASP

<sup>26</sup>We’ve seen, in the case of ‘before’ sentences, that expletive negation can be disambiguating. But crucially, an expletive-negation construction is truth-conditionally equivalent to its non-negated counterpart in any context in which is licensed (while the opposite is not necessarily true), so it remains true that an expletive negation construction is marked in any context in which it is licensed.

<sup>27</sup>Delfitto et al. (2019) argue that other cases of expletive negation in negative verbs carry the implicature that the event is *more* likely to happen:

- (i) Ho            proprio paura che non mi            combini            un grosso guaio.  
       have-1SG really    fear    that NEG to-me.CL causes-3SG.SUBJ a    big    trouble  
       ‘I’m really afraid he will cause me huge trouble (which is likely).’ *Italian* (Delfitto et al., 2019)

This observation really tightens the connection to manner implicatures (specifically litotes like (111b)) for which there is often more than one way to be an atypical value on a scale (depending on the construction’s competitors).

‘John hopes/fears that Mary might come (although it is unlikely to happen).’

*Korean* (Yoon, 2022, 609)

- (113) Yoko -wa kanojo -no jooshi -ga hannin ja (nai) ka to omot -te  
 Y -TOP she -GEN boss -NOM culprit COP.WA NEG Q.PRT TO think -TE  
 iru.

ASP.NPST

‘Yoko thinks that that her boss is (probably) the culprit.’

*Japanese* (Goodhue and Shimoyama, 2024)

- (114) A: Mary continued to say stupid things. She’s really an idiot, you know?

B: But you’re wrong! I know Mary very well and she’s...

- a. ...più intelligente di quanto tu credi.  
 more intelligent than what you think.2SG  
 ‘more intelligent than you think.’

- b. ??...più intelligente di quanto tu non creda.  
 more intelligent than what you NEG think.2SG.SUBJ  
 ‘more intelligent than you think.’

*Italian* (Napoli and Nespor, 1976, 63)

Related, the expletive negation in Korean ‘since’ constructions has been reported to imply that the embedded event is improbable, undesirable, or unlikely (Yoon, 2011). (115) is reported as communicating in not-at-issue content that not taking a shower is more undesirable than taking a shower.

- (115) Nay-ka syawe-lul an ha-nci cham olay toyessta.

INOM shower-ACC NEG do-since very long.time became

‘It has been a very long time since I took a shower (which is desirable).’

*Korean* (Cépeda, 2018, 165)

There is precedence for markedness being associated with unlikelihood and improbability, especially in the VP; Lippard and Langa da Câmara (2026) argue that this is what happens in object-marker doubling constructions in Bantu as well as clitic-doubling constructions in Romance.

Markedness in scalar relations can give rise to canonically scalar atypicality implicatures. On the one hand, Cépeda (2018) argues that positive-antonym equatives without expletive negation are not evaluative (i.e., do not entail that the subject is tall, as *as tall as* fails to do), but those with expletive negation are.

- (116) C’est une recherche qui est aussi importante que (ne) l’est le séro-diagnostic.

it.is a research that is as important as NEG it.is the serodiagnosis

‘It is a research that is as important as serodiagnosis.’

*French* (Cépeda, 2018, 201)

In particular, she argues that when (116) contains expletive negation, it implies—in contrast to its non-negated counterpart—that serodiagnosis is important.

This scalar property—referred to as ‘evaluativity’ or ‘norm-relatedness’—has elsewhere been characterized as a manner implicature (Rett, 2015c). It arises whenever a positive-antonym construction and its negative-antonym counterpart are mutually entailing, and only on the marked construction (compare the non-evaluative *as tall as* to the evaluative *as short as*). Because the present proposal treats expletive negation in degree relations on par with negative antonyms, this evaluativity is directly predicted.

Relatedly, Krifka (2010b) and Cépeda (2018) observe a similar meaning difference between a ‘before’ construction like (117a) and its negated version in (117b): the negated version positions *A*

significantly before *B*:

- (117) a. Olga mangera son déjeuner avant que Dani regarde la télé.  
           O will.eat her lunch before that D watch.SUBJ the TV  
           ‘Olga will have lunch before she watches TV.’  
       b. Olga mangera son déjeuner avant que Dani ne regarde la télé.  
           O will.eat her lunch before that D NEG watch.SUBJ the TV  
           ‘Olga will have lunch well before she watches TV.’ *French* (Cépeda, 2018, 134)

We can think of this as evaluativity in the temporal domain, which is predicted if evaluativity (qua a requirement that a value be atypical, or notable) arises as a manner implicature in scalar constructions. Specifically, if the two constructions in (117b) have the same truth conditions, we predict that (117b) carries the manner implicature that the temporal relation is atypical for a ‘before’ relation (i.e., significantly before).<sup>28</sup>

Tahar (2021) reports two other implicatures that can (but need not be) associated with expletive-negation ‘before’ constructions in French: a frustrative use, which indicates that the speaker is frustrated by the situation, and an ‘apprehensive’ use, which “conveys a negative purposive inference” (p609). She derives them as scalar implicature, but their sheer semantic variation (coupled with claims of other implicatures like the one in (117b)) rule that out as a possible unified analysis. The readings do, however, have in common that they are (context-sensitive) atypical instantiations of the relation, which is exactly what we’d expect of a manner implicature.

In sum: just by virtue of the fact that it’s optional and non-truth-conditionally impactful, most (if not all) accounts of low expletive negation indirectly result in the prediction that expletive negation constructions carry a manner implicature. And that is certainly true of the account proposed here. In this section, I’ve added some detail to explain how standard, context-sensitive accounts of manner implicatures can explain a wide variety of not-at-issue content that has been associated with expletive negation constructions cross-linguistically.

## 6.2 Embedding verbs and other constructions

Above I argued that contexts that license expletive negation are semantically ambivalent contexts: contexts for which the contribution of an argument  $\alpha$  is truth-conditionally equivalent to the contribution of its negation  $\neg\alpha$ . While I’ve given an example of semantic ambivalence that doesn’t involve a scalar relation—(2)—I have argued that low expletive negation is disproportionately licensed in scalar relations (e.g. comparatives, ‘before’ constructions) because many scalar relations instantiate a particular subtype of semantic ambivalence I’ve called fixed-point ambidirectionality. In this section I briefly extend the current proposal to non-scalar licensors of low expletive negation.

Jin and Koenig (2021) cite eight languages in which expletive negation is licensed by ‘unless’ (in Afrikaans, Croatian, Dutch, French, Italian, Mandarin, Persian, and Slovenian), and seven languages in which it is licensed by ‘without’ (in Breton, French, Haitian, Hebrew, Italian, Portuguese, and Turkish). However, the only example I’ve been able to find of any of these constructions is from Greco (2019a), for Italian:

<sup>28</sup>Cépeda (2018) accounts for this and the standard evaluativity in (116) in terms of the restriction to overlapping scalar relations she believes expletive negation displays: namely, if expletive negation is only licensed when a temporal relation allows overlap between its interval arguments, then such constructions require that the precedence relation avoids the overlap, putting the timing of A farther away from the timing of B than would be required in a non-negated construction. But, as we’ve already seen, this isn’t an accurate characterization of the meaning of ‘before’ constructions (or of what unifies expletive negation constructions); it incorrectly predicts expletive negation is not licensed in comparatives or superlatives, and incorrectly characterizes ‘before’ as requiring temporal overlap.

- (118) Me ne andr  a meno che tu non mangi.  
 I CL go.away unless that you NEG eat.2SG.SUBJ  
 ‘I will go away unless you eat.’

*Italian* (Greco, 2019a)

However, Greco specifies that the negation here is not optional, and that (118) cannot be interpreted as ‘I will go away unless you do not eat’ (i.e., that it doesn’t have a standard negation reading). In the absence of any other information about these constructions (whether they license NPIs, what sorts of additional meaning they’re associated with), I will thus tentatively classify them as instances of high expletive negation, and suggest that they be treated alongside those examples (see e.g. AUTHOR FORTHCOMING). Certainly, if ‘unless’ in (118) creates a biconditional, it’s hard to imagine this internal propositional argument as constituting a semantically ambivalent environment: it seems more like the high-expletive-negation conditionals *If it isn’t my favorite philosopher!*. Due to the lack of data, I will have to leave the issue of ‘unless’ and ‘without’ as licensors aside for now.

In contrast, the distribution of low expletive negation in propositional attitude verbs is broad and well-attested, as discussed in §2.2.4. The primary challenge of tucking these constructions in under the explanatory blanket of semantic ambivalence comes from the fact that there is quite a bit of cross-linguistic variation with respect to precisely which embedders license expletive negation in a given language. In this respect, expletive negation is a lot like subjunctive mood, as noted in Napoli and Nespor (1976) and Zeijlstra (2004). In this subsection, I focus on canonical expletive-negation-licensing verbs like *not sure* and *doubt*, and illustrate how these verbs exhibit semantic ambivalence more like that in (2) than the fixed-point ambidirectionality cases we’ve become familiar with. While this provides a template for language- and verb-specific extensions of the general principle, I will (as before) be unable to provide an account of all expletive-negation-licensing propositional attitude verbs in all languages.

There are certain embedding verbs that clearly create a semantically ambivalent context, i.e. a context in which its semantic argument is equivalent to its negation. In many languages, including English, we see this situation under the embedding verb *be not sure*:

- (119) a. I’m not sure if I should(n’t) see him Monday.  
 b. Non sono sicura se io (non) debba vederlo lunedì.  
 NEG be.1SG sure.F if I NEG should.1SG.SUBJ see.3MSG.CL Monday  
 ‘I’m not sure if I should(n’t) see him Monday.’ *Italian* (Napoli and Nespor, 1976, 87)

Intuitively, (119) means the same thing with negation in its embedded CP as it does without: in a situation in which the future possible worlds are split into two subsets A and B, and you’re not sure whether you’re in Subset A, you’re necessarily not sure whether you’re in Subset B.

Several things need to conspire to create this sort of semantic environment. As with the case of semantic ambivalence in (2), matrix negation seems to play a clear role, but it’s an indirect and semantic role, rather than a direct syntactic role. If we remove the matrix negation, we get an embedding verb, *be sure*, that is not semantically ambivalent with respect to its negated argument.

- (120) I’m sure I shouldn’t see him Monday.

If I’m sure I shouldn’t see him Monday, it’s false that I’m sure I shouldn’t see him Monday. So removing the embedded negation results in a verb that is extremely biased towards its argument’s denotation. This is to be expected given the observation that most verbs are biased, to some extent, towards their argument.

Note that *be sure* is CP-embedding, but *not be sure* embeds a question. When the argument is

a question, the verb can no longer presuppose the truth of its argument (because its argument is a question, neither true nor false). So we expect that negative verbs that license expletive negation are more likely to do so in their question-embedding forms than their proposition-embedding forms. *Forget* – which is another responsive predicate, able to take either a proposition or question as its argument – illustrates this well.

- (121) a. Chris forgets whether Maria is a phonologist.  
 $\leftrightarrow$  Chris forgets whether Maria isn't a phonologist.  
 b. Chris forgets that Maria is a phonologist.  
 $\leftrightarrow$  Chris forgets that Maria isn't a phonologist.

The two sentences in (121b) fail to be equivalent because the embedding verb, *forget*, is factive in its proposition-taking form. As a result, the two sentences carry opposing presuppositions, both of which cannot be satisfied in a single context. The same scenario holds for the verb *worry*.

- (122) a. Gillian worries whether Lucas will make it home OK.  
 $\leftrightarrow$  Gillian worries whether Lucas won't make it home OK.  
 b. Gillian worries that Lucas didn't make it home OK.  
 $\leftrightarrow$  Gillian worries that Lucas made it home OK.

The negated sentence in (122a) (*wonders whether Lucas won't make it home*) seems to highlight the possibility that he won't make it home OK, which is in keeping with what we know about the role of negation in highlighting possibilities (Romero and Han, 2004; Roelofsen and van Gool, 2010). Because this isn't encoded at the truth-conditional level, we still see mutual entailment between one form and its negated version. But we see some residual semantic differences between the two sentences at the non-truth-conditional level (i.e., the negated version seems to highlight the possibility that Lucas won't make it home OK).

In sum, there are a lot of verbs that license expletive negation this section hasn't addressed: those that only take propositions as arguments (e.g. *deny*, *hide*, *regret*), and those that take DPs as arguments (e.g. *beware*, *forbid*, *prohibit*, *refuse*). But I hope this section serves as a proof of concept that the idea of semantic ambivalence can be extended to at least some cases of expletive negation under negative verbs, and some idea of the sort of explanation that would bring these verbs into line with others. The proposal here is that such verbs would need to license semantically ambivalent contexts, and those verbs are more likely to be unbiased with respect to the truth of their argument, which in turn means they're more likely to be negative and question-embedders. The observed cross-linguistic correlation between these instances of negation and subjunctivity (Romero, 2015; Zeijlstra, 2004) could also help explain why we see variation in licensing across languages despite this semantic explanation of expletive negation (as argued explicitly in Napoli and Nespore, 1976, for comparatives), but the details of such a connection will have to be the subject of future research.

### 6.3 NPI-licensing

Recall from §6.3 that one hallmark of low expletive negation—in contrast to high expletive negation—is that it has the potential to license NPIs, depending on the construction and language. This is illustrated below (repeated from (18), (14) and (16), respectively) for several different expletive-negation constructions.

- (123) Maria ha mangiato più mele di quante non ne abbia mai mangiate  
 M has eaten more apples of than NEG CL.3PL have.3SG.SUBJ never eaten  
 Gianni.  
 G  
 ‘Maria has eaten more apples than Gianni has ever eaten.’ *Italian* (Greco, 2019a)
- (124) Olga mangera son déjeuner avant qu’elle ne regarde quoi que ce soit.  
 O eat.3SG.FUT her lunch before that-she NEG watch.3SG.PRS anything  
 ‘Olga will have lunch before she watches anything.’ *French* (Valentine Hacquard, p.c.)
- (125) Rimarri qui finché non avrai alzato un dito per aiutar-mi.  
 stay.2SG.FUT here until NEG have.2SG.FUT lifted a finger to help-me  
 ‘You will stay here until you have lifted a finger to help me.’ *Italian* (Greco, 2018)

Curiously, these are constructions that license NPIs in the absence of negation. Specifically, they are all constructions whose internal arguments (the arguments in which expletive negation occurs) are already downward-entailing. This is illustrated (in English) for the comparative and ‘before’ constructions; the corresponding Italian and French examples are the same as (123) and (124) without expletive negation.

- (126) a. Maria is older/younger than Gianni has ever been. *comparative*  
 b. Olga finished her book before she started doing anything else. *before*

Note that while NPIs are licensed in comparatives formed from either positive or negative antonyms, they’re only licensed in ‘before’ (but not ‘after’) constructions (see §5).<sup>29</sup>

This observation is not entirely new; many syntactic accounts characterize the environments in which expletive negation is licensed as downward-entailing, and thus characterize expletive negation (and neg-words) as licensed by some sort of higher (null) negation-like operator (e.g. Napoli and Nespor, 1976; Labelle, 2023).

The question for the present account, then, is the following: can we accurately predict that expletive negation doesn’t block NPI-licensing where it is already licensed, at least potentially? The answer is yes; in each of the constructions considered here, the switch from a non-negated construction to a negated construction doesn’t change the monotonicity of the argument, because each of these scalar relations are defined in terms of the maximum of their internal argument. I will demonstrate this for the comparative in English, but the account is general to all explicit comparatives (and all temporal relations).

In the case of scalar relations, downward-entailingness is calculated on scalar or interval arguments, not on the individual subjects that help form those arguments, Rett 2015b). So, in a situation in which A is 6ft tall and B is 5ft tall, we get the following entailment (given that  $\{1,2,3,4,5,6\} \supset \{1,2,3,4,5\}$ ):

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<sup>29</sup>‘Until’ is an interesting case; it generally doesn’t license NPIs, but has itself been characterized as an NPI, due to contrasts like the following:

- (i) a. \*Olga fell asleep until noon.  
 b. Olga didn’t fall asleep until noon.

This difference is characterized in §5.6.1 in terms of a durativity requirement on the matrix event; if the *until* in (ib) is in fact an NPI, we need an explanation for why the construction doesn’t license (other) NPIs (cf. \**Olga didn’t fall asleep until anyone lifted a finger to help her*. Since Italian is the only language that’s been reported to license NPIs in ‘until’ clauses (compared to e.g. Spanish in (15)), and since the NPI status of ‘until’ itself is unclear, I will unfortunately have to put aside these constructions for the time being.

- (127) C is taller than A.  $\rightarrow$  C is taller than B.
- a.  $= \text{MAX}_+(C) >_+ \text{MAX}_+((0,6]) = \text{MAX}_+(C) >_+ 6 \rightarrow$
  - b.  $= \text{MAX}_+(C) >_+ \text{MAX}_+((0,5]) = \text{MAX}_+(C) >_+ 5$

Specifically, the standard degree-semantic theory of comparatives correctly predicts that comparatives are downward-entailing in their internal argument because they relate maxima. The same holds for negative-antonym comparatives, as shown in (130), assuming that the notion of downward-entailingness is scale-sensitive.

- (128) C is shorter than B.  $\rightarrow$  C is shorter than A.
- a.  $\text{MAX}_-(C) >_- \text{MAX}_-(\infty,5] = \text{MAX}_-(C) >_- 5 \rightarrow$
  - b.  $\text{MAX}_-(C) >_- \text{MAX}_-(\infty,6] = \text{MAX}_-(C) >_- 6$

(130) predicts that ‘C is shorter than B’ entails ‘C is shorter than A’ whenever B is shorter than A (i.e., whenever the shortest degree to which B is short exceeds on the ‘short’ scale the shortest degree to which A is short).

What follows is a demonstration that the same entailment patterns hold for comparatives with expletive negation.

- (129) C is taller than NEG A.  $\rightarrow$  C is taller than NEG B.
- a.  $= \text{MAX}_+(C) >_+ \text{MAX}_-(\infty,6) = \text{MAX}_+(C) >_+ 6 \rightarrow$
  - b.  $= \text{MAX}_+(C) >_+ \text{MAX}_-(\infty,5) = \text{MAX}_+(C) >_+ 5$
- (130) C is shorter than NEG B.  $\rightarrow$  C is shorter than NEG A.
- a.  $\text{MAX}_-(C) >_- \text{MAX}_+((0,5)) = \text{MAX}_-(C) >_- 5 \rightarrow$
  - b.  $\text{MAX}_-(C) >_- \text{MAX}_+((0,6)) = \text{MAX}_-(C) >_- 6$

The calculus for temporal relations is much more complicated, given the ambiguities, but holds—as predicted—for ‘before’ but not ‘after’; Rett (2020a) argues that the account predicts ‘before’ licenses NPIs only in its ‘before the starting point’ interpretation, which is the only interpretation available to ‘before’ constructions with expletive negation.

In sum, expletive negation is generally only available where (weak) NPIs are licensed; this means that relevant desideratum for the present account is merely to not block that licensing, and that is what we see. These scalar relations are downward-entailing by virtue of the fact that they relate maxima, and this account predicts that they relate the same maxima when the constructions contain expletive negation.

While there is, to my knowledge, no typology of the coincidence of low expletive negation and NPI-licensing, Greco (2018, 2019a) makes clear that low expletive negation in Italian differs from Italian standard negation in its inability to license strong NPIs. Currently, this account cannot predict any difference between expletive and standard negation in this respect, so it remains to be seen what the relevant mechanism is here (and how the data vary cross-linguistically). That said, Heim (1984) and von Stechow (1999) observe key differences between constructions that are downward-entailing in any context and those that are only downward-entailing in contexts that hold fixed relevant meaning, and that could be a key consideration in the case of expletive negation constructions, which we’ve seen have a more restricted distribution and interpretation than their non-negated and standardly negated counterparts.<sup>30</sup>

<sup>30</sup>Thanks to a reviewer for suggesting the relevance of this work.

## 7 Conclusions and extensions

Traditionally, work on expletive negation has focused on the phenomenon in a single language or a single construction; the corresponding theories have thus been quite language- or construction-specific. The goal of this paper is to approach expletive negation from a broader perspective, to try to get at the fundamentals of the construction, so we can explain its general distribution before accounting for its specific instantiations. This has required isolating low expletive negation—which generally occurs where standard negation does, but is optional and does not seem to affect the truth-conditions of a sentence—from high expletive negation. It has also required recognizing the language-specific parameters at play: namely, which scalar relations and embedding verbs allow it in a given language, and whether or not NPIs are licensed in those contexts.

There is a sense in which the proposal advanced here is merely a restatement of fact: expletive negation is licensed in contexts that are semantically ambivalent, i.e. contexts in which there is no substantive difference between the denotation of an argument and the denotation of its negation. This perspective gives us a very intuitive explanation of the wide cross-linguistic distribution of expletive negation, and of the fact that languages exclusively use negation to mark it.

But, as always, the devil lies in the details. I’ve introduced a subspecies of semantic ambivalence called ‘fixed-point ambidirectionality,’ and argued that it’s a property of most but not all scalar relations: those and only those that license expletive negation. A scalar relation exhibits fixed-point ambidirectionality iff it relates its matrix argument to the maximally informative bound of its embedded argument. When scalar relations only care about maximally informative bounds, we see no difference between an interval and its inverse.

There are a few testable but untested predictions of this proposal: that cross-polar anomaly is prohibited because it’s needlessly marked, not because it’s syntactically or semantically deviant; that the availability of expletive negation in a language’s degree relations is correlated with the ability to form degree relatives in that language, and to coerce to maxima; and that expletive negation in a language’s temporal relations is correlated with the ability of event negation in that language to associate with the preceding inverse interval (not just the succeeding inverse interval). There is perhaps also a prediction that expletive negation is licensed in exclamatives only in languages whose exclamatives are subject to the Degree Restriction. I’ve done my best to provide independent support for the assumptions here, but the empirical coverage is so broad, there remains a lot to do.

I will end by highlighting the potential for extending the notion of semantic ambivalence to a still-broader phenomenon of negation occurring where it doesn’t seem to be justified. These include antonym pairs like *flammable* and *inflammable* or *valuable* and *invaluable*, where the negation prefix doesn’t seem to change the meaning of the word. But it also seems to be extendable to putative speech errors where negation can be deleted without impacting the meaning of the sentence, as in (131).

- (131)    a.    Sam couldn’t care less.  
          b.    Sam could care less.

Rather than being anomalies, this account predicts we’d find smatterings of such examples across languages and constructions, not because negation is meaningless, but because of the potential for many constructions to be ambiguous between more than one valency in a given context. This seems like a welcome prediction, and it seems especially encouraging to think of this as a natural consequence of the context-sensitivity of language, rather than an exception to its presumed compositionality.

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