

# Polar particle responses to quantified utterances\*

Jérémy Pasquereau  
jepasquer@gmail.com

6 september 2019

I show and provide an explanation for the fact that the denotation of **Polar Response Particles** in French depends not only on the polarity of its antecedent, but also on the scope of negation w.r.t other scope-bearing operators in its antecedent

## 1 Introduction

### 1.1 The contrast of interest

- In response to the negative question in (1), bare unstressed *non* must signal agreement with the [antecedent proposition] in A<sup>1</sup>

(1) A: Est- ce qu' [ils n' ont pas encore été reçus] ?  
is it that they NEG have NEG yet been received

*Have they not been received yet?*

B: Je crois que non. = agree / \*reverse

I believe that no

*I believe that they have not.*

- However, although (2A) is negative like (1A), unlike (1B), the *non* response in (2B) must reverse the polarity of the antecedent *someone has not yet been received*.

(2) Context: A GP is surprised to be done with patient consultations earlier than she expected. She asks her secretary:

A: Est- ce que [quelqu'un n' a pas encore été reçu] ?  
is it that someone NEG has NEG yet been received

*Has someone not been received yet?*

B: Je crois que non. = \*agree / reverse

I believe that no

*I believe that everyone has been received.*

- The contrast can be summarized as in (3).

\*Thanks to Rajesh Bhatt, Vincent Homer, Donka Farkaš, Patricia Cabredo Hofherr, Adrian Brasoveanu, and Matthew Baerman for their feedback on this project. Thanks also to my consultants. All errors are my own.

<sup>1</sup>I'm only talking about unaccentuated *non* here; the reverse reading, but not the agree reading, is marginally possible with contrastively accentuated bare *NON*, see Pasquereau 2018 for more detail.

- (3) Meaning of *non* in response to a negative question as a function of scope of negation

example	scope-bearing operators in antecedent	meaning of <i>non</i>
(1)	$(\neg p)?$	agree / *reverse
(2)	$(\exists \neg p)?$	*agree / reverse

- Why and how does the meaning of *non* depend on the relative scope of scope-bearing operators in its antecedent?

## 1.2 Sketch of the analysis

- Embedded bare PRPs in French come with a clause (Pasquereau, 2018) which can be elided under some notion of identity with a constituent given in the discourse ‘the antecedent’ (see section 3.1)
- The intuition I would like to explore is that a sentence is negative when negation is the highest scope-bearing operator, and not negative otherwise, for instance, when negation is outscoped by a quantifier (an intuition also expressed in Roelofsen and Farkas 2014)
- Following this intuition, the interpretation of *non* can be characterized by the following generalization (4) (refined in section 3):

- (4) *non* conveys *agree* when the antecedent proposition/prejacent is negative as in (a); however when it is not negative, *non* reverses the polarity of its antecedent proposition/prejacent (b).

- a.  $\llbracket \text{que } non \llbracket_{prej} \text{ NEG } (\exists/\forall) p \rrbracket \rrbracket = \neg(\exists/\forall)p \quad \leftarrow non_{agree}$
- b.  $\llbracket \text{que } non \llbracket_{prej} (\exists/\forall \text{ NEG}) p \rrbracket \rrbracket = \neg\exists/\forall\neg p \quad \leftarrow non_{reverse}$

- Goal of this paper: to explore a way to derive the intuition about the polarity of propositions **without typing/markings semantic objects as either positive or negative** (as in Roelofsen and Farkas 2014)
- Claim: PRPs do not allow scope reversal in their scope
- The PRP *non* :
  - is the realization of material which originates in several places in its prejacent, e.g. clausal negation
  - requires the denotation of the constituent it heads to be either (i) equal to, or (ii) the complement of its antecedent
  - if neither of these conditions is met, a last resort, Covert clausal negation can be inserted under ellipsis (giving, as a consequence, the reverse reading)

- OUTLINE:
  - Background on PRPs in French
  - Description of the data
  - Analysis
  - Conclusion

## 2 Background about French PRPs

- Consider the three Polar Response Particles in (5)<sup>2</sup>: *oui, non, si*.
- They are used to respond to two types of ‘discourse initiatives’ (Roelofsen and Farkas, 2014): questions (5A1) and assertions (5A2).
- They can appear embedded or not, bare (5B1/B4), accompanied by a fragment (5B2/B5), or at the periphery of a full clause (5B3/B6).

(5) a. Discourse initiative: (question or assertion)

A1: Est- ce qu’ ils vont venir ? Question  
 is it that they go come  
*Are they going to come?*

A2: Ils vont venir. Assertion  
 they go come  
*They are going to come.*

b. Response (matrix or embedded; bare, fragment-peripheral, or clause-peripheral)

B1: Non  
 no  
*They will not come.*

B4: Je pense que non.  
 I think that no  
*I think that they will not come.*

B2: Tom non.  
 Tom no  
*Tom will not come.*

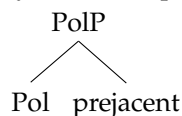
B5: Je pense que Tom non.  
 I think that Tom no  
*I think that Tom will not come.*

B3: Non, ils ne vont pas venir.  
 no they NEG will NEG come  
*No, they will not come.*

B6: Je pense que non, ils ne vont pas venir.  
 I think that no they NEG will NEG come  
*I think that no, they will not come.*

- In line with previous work (Kramer and Rawlins, 2011; Roelofsen and Farkas, 2014) I assume that embedded PRPs in French are the spell out of a Pol head which takes a clause as its complement (6) (see Pasquereau 2018 for arguments)

(6) Syntax of Responses containing Polar Response Particles



- In this paper, I illustrate my arguments with embedded bare PRPs (whose prejacent has been elided) that respond to questions<sup>3</sup>
- In particular, I focus on bare unaccented *non* used in response to low negative questions

## 3 Interaction of PRPs and scope-bearing operators

### 3.1 Responses to positive questions

- In response to a positive question *p?*, answering with *non* asserts the negation of the questioned proposition, i.e.  $\neg p$ , whether *p* in the question contains a scope-bearing operator or not.

<sup>2</sup>There are more particles that can be used in responses in French, e.g. *ouais, nan, hmm-hmm, oui oui, mais oui, ...* but I limit my investigation in this paper to unaccented *oui, non, si*.

<sup>3</sup>PRP embedding is constrained by several rules, see Pasquereau 2018.

– in (7), the *non*-response asserts the negation of the questioned proposition *Olivier went to his place*

(7) A: Est -ce qu' Olivier est allé chez lui ?

is it that Olivier is gone to his

*Has Oliver gone to his place ?*

B: Je crois que non.

I believe that no

*I believe that he has not.*

- Meaning of antecedent: Oliver has gone to his place

- Meaning of *non(p)*:  $\neg$ (Oliver has gone to his place)

– in (8), the *non*-response asserts the negation of the questioned proposition *someone went to his place* (where *someone* is interpreted non-specifically)

(8) Context: My friends and I are really upset at Jean and we all promised not to go to his party.

A: Est -ce que quelqu'un est allé chez lui ?

is it that someone is gone to his

*Has someone gone to his place ?*

B: Je crois que non.

I believe that no

*I believe that no one has.*

- Meaning of antecedent:  $\exists x$ . x has gone to his place

- Meaning of *non(p)*:  $\neg(\exists x$ . x has gone to his place)

- The pattern can be summarized as in (9): when its antecedent does not contain clausal negation, the meaning of *non(p)* is the negation of that antecedent, in other words: it reverses the polarity of its (positive) antecedent.

(9) Meaning of *non* in B responses

Ex.	Meaning of antecedent	Meaning of <i>non (p)</i>
(7)	Olivier went to his place	$\neg$ Olivier went to his place
(8)	$\exists x$ . x went to his place	$\neg \exists x$ . x went to his place

### 3.2 Responses to (low) negative questions

- With antecedents that contain clausal negation, the scope of negation w.r.t. other scope-bearing operators matters

– I begin with the negative counterpart of the example we started with in (7). The fact that the antecedent is now negative (10) does not change the meaning of the *non*-response

(10) A: Est -ce qu' Olivier n' est pas allé chez lui du tout ?

is it that Olivier NEG is NEG gone to his at all

*Has Oliver not gone to his place at all ?*

B: Je crois que non.

I believe that no

*I believe that he has not.*

- Meaning of antecedent:  $\neg$ (Olivier has gone to his place)

- Meaning of *non(p)*:  $\neg$ (Olivier has gone to his place)

- In the next examples, I look at the same example except that the subject is a (non-specific) existential quantifier.

\* In (11), the (unspecific) existential quantifier contributed by *quelqu'un* 'someone' – being a Positive Polarity Item – must be interpreted outside the scope of negation. The *non*-response can only reverse its antecedent and mean that it is not the case that someone has not been to his place.

(11) Context: I want to make sure that my 10 employees all have been at least once to Mr. Dupont's house. My records indicate that this is not the case, but they are also not always accurate. I ask:

A: Est -ce que quelqu'un n' est pas allé chez lui du tout ?

is it that someone NEG is NEG gone to his at all

*Has someone not gone to his place at all ?*

B: Je crois que non.

I believe that no

*I believe that everyone has been to his place.*

- Meaning of antecedent:  $\exists x \neg(x \text{ has gone to his place})$

- Meaning of *non*(p):  $\neg(\exists x \neg(x \text{ has gone to his place}))$

\* In (12), the existential quantifier is contributed by the N-word *personne* 'no one' which must be interpreted in the scope of negation. There, the *non*-response agrees with the antecedent and means that indeed, no one has been to his place.

(12) A: Est -ce que personne n' est allé chez lui du tout ? ( $\neg > \exists > \text{du tout}$ )

is it that nobody NEG is gone to his at all

*Has no one gone to his place at all ?*

B: Je crois que non.

I believe that no

*I believe that no one has been to his place.*

- Meaning of antecedent:  $\neg(\exists x. x \text{ has gone to his place})$

- Meaning of *non*(p):  $\neg(\exists x. x \text{ has gone to his place})$

The interpretation of a *non* response varies as a function of the relative scope of clausal negation and other scope-bearing operators in the antecedent of *non*.

• The pattern with negative antecedents can be summarized as in (13)

(13) Meaning of *non* in B responses

Ex.	Meaning of antecedent	Meaning of <i>non</i> (p)
(7)	Olivier went to his place	$\neg$ Olivier went to his place
(8)	$\exists x. x$ went to his place	$\neg \exists x. x$ went to his place
(10)	$\neg$ (Olivier went to his place)	$\neg$ (Olivier went to his place)
(11)	$\exists x. \neg(x$ went to his place)	$\neg \exists x. \neg(x$ went to his place)
(12)	$\neg(\exists x. x$ went to his place)	$\neg(\exists x. x$ went to his place)

• I propose the generalization in (14) to describe the pattern summarized in (13) .

(14) First generalization about the interpretation of *non* (p)

- if negation is the outermost scope-bearing operator in the antecedent of *non*(p), *non*(p) asserts its antecedent (i.e. it agrees with it)

- otherwise, *non*(p) asserts the negation of its antecedent (i.e. it reverses it)

- So far we have only looked at existential quantification in subject position but it holds with both existential and universal quantification, whatever their syntactic position or syntactic category. For instance, depending on whether the adverb *souvent* 'often' is interpreted inside or outside the scope of negation, *non* agrees (15) or not (16).
- In (15), *souvent* 'often' is in the scope of negation (as reflected in the linear order of *pas* and *souvent*)

(15) Context: An insurance company employee wants to make sure that the new professional soccer player they might insure is healthy:

A: Est -ce qu' il ne va pas souvent chez le médecin ?

is it that he NEG goes NEG often to the doctor

*Does he not go often to the doctor's?*

B: Il me semble que non.

it to.me seems that no

*It seems to me that he does not go often.*

- Meaning of antecedent:  $\neg$ (he often goes to the doctor's)

- Meaning of *non*(*p*):  $\neg$ (he often goes to the doctor's)

- In (16), negation is in the scope of *souvent* 'often' (as reflected in the linear order of *souvent* and *pas*)

(16) Context: A doctor asks a teacher who's worried about a child's health:

A: Est -ce qu' il n' est souvent pas là ?

is it that he NEG is often NEG there

*Is he often not there?*

B: Il me semble que non.

it to.me seems that no

*It seems to me that it's not the case that he is often not there.*

- Meaning of antecedent: often( $\neg$ (he is there))

- Meaning of *non*(*p*):  $\neg$ (often( $\neg$ (he is there)))

- I have tested several scope-bearing operators (in subject, object, oblique positions where applicable).<sup>4</sup> I summarize a representative sample of the data in (17).

---

<sup>4</sup> See database available at <https://jeremy-pasquereau.jimdo.com>

(17) Summary table for unstressed bare *non*

S-B op. in antecedent	Response type	
	non	
$\neg p$	$\boxed{\neg p}$ *	agree reverse
N-word ( $\neg \exists$ )	$\boxed{\neg \exists}$ *	agree reverse
quelqu'un 'someone' ( $\exists \neg$ )	* $\neg \boxed{\exists \neg}$	agree reverse
tout DP 'every NP' $\neg \forall$	$\boxed{\neg \forall}$ *	agree reverse
-----		
$\forall \neg$	* $\neg \boxed{\forall \neg}$	agree reverse
devoir 'must' $\neg \forall$	$\boxed{\neg \forall}$ *	agree reverse
-----		
$\forall \neg$	* $\neg \boxed{\forall \neg}$	agree reverse
souvent 'often' $\neg svt$	$\boxed{\neg svt}$ *	agree reverse
-----		
$svt \neg$	* $\neg \boxed{svt \neg}$	agree reverse
seule Marie 'only Marie' ( $\forall \neg$ )	* $\neg \boxed{\forall \neg}$	agree reverse

- In addition, note that whatever the number of operators in the antecedent, all that matters is the height of clausal negation relative to these operators.<sup>5</sup>
- Thus in (18), a response with *non* negates its antecedent containing the sequence  $\exists > \neg > \exists$ .

(18) A. Est -ce que quelqu'un n' a rien fait du tout ? ( $\exists \neg \exists$ , \* $\neg \exists \exists$ , \* $\exists \exists \neg$ )

is it that someone NEG has nothing done at all

*Has someone not done anything at all?*

B. Il me semble que non. ( $\neg \boxed{\exists \neg \exists}$ , \* $\exists \neg \exists$ )

it to.me seems that no

*It seems to me that no one did nothing/everyone did something*

- Meaning of antecedent:  $\exists x(\neg(\exists y. x \text{ has done } y))$

- Meaning of *non(p)*:  $\neg(\exists x(\neg(\exists y. x \text{ has done } y)))$

<sup>5</sup>I thank Donka Farkaš for suggesting that I look at these configurations.



### Taking stock

- the scope relation that matters for the descriptive generalization is not (only) the one that holds semantically in the denotation of the antecedent: although  $\forall \neg = \neg \exists$ , those scope relations yield different response patterns with *non*
- the generalization is about the syntactic scope of negation with respect to quantificational elements

### 3.3 Neg-raising

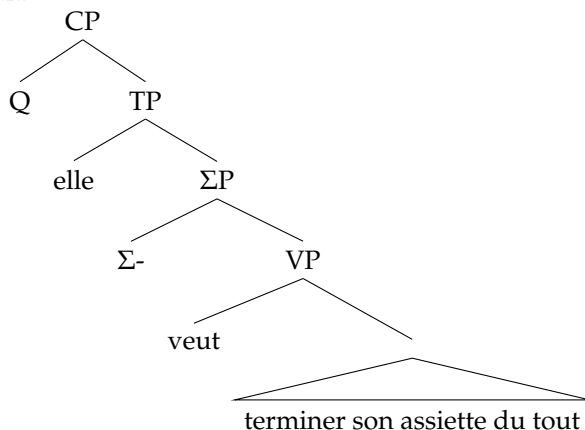
- If we assume the excluded-middle analysis of neg-raising of Bartsch 1973, a sentence with the neg-raiser *vouloir* 'want' and the strong NPI *du tout* 'at all' like (19) is such that the neg-raiser *vouloir* 'want' achieves wide scope over (semantic) negation while being in its syntactic scope all along (i.e. semantically only the lower predicate is negated).

(19) Est -ce qu' elle ne veut pas terminer son assiette du tout ?

is it that she NEG want NEG finish her plate at all

*Does she not want to finish her plate at all?*

a. LF



b.  $\llbracket \text{TP} \rrbracket = \forall w' \in \text{BOUL}_{w,x} \neg (x \text{ finishes } x\text{'s plate in } w')$

- According to this view, neg-raising predicates constitute a case where semantic and syntactic scope come apart, thus a *non*-response to (19) like (20) is predicted to have different interpretations depending on whether the generalization is stated at LF or at the semantic level.
- **If negation at LF matters**, we expect an embedded *non* response like (20) to **agree** with the antecedent TP and to mean 'she does not want to finish her plate at all' (after the excluded-middle presupposition has been taken into account).
- **If semantic negation matters**, we expect the embedded *non* response to **reverse** its antecedent TP and to mean *she wants to finish her plate*.

(20) Je crois que non.

I believe that no



- a. Interpretation as predicted by LF generalization: *non<sub>agree</sub>*  
I think that she does not want to finish her plate at all.
- b. Interpretation as predicted by semantic negation generalization: *non<sub>reverse</sub>*  
\* I think that she wants to finish her plate.

- The meaning of (20) is 'I think that she does not want to finish her plate at all'.
- The meaning of the embedded *non* response is predicted if the descriptive generalization in (14) is stated over its LF representation<sup>6</sup>

### 3.4 Summary

- The observations above can be summarized as in (21).

(21) Meaning of *non* in B responses (truth-conditions)

Ex.	Meaning of antecedent	Meaning of <i>non</i> (p)
(7)	Olivier went to his place	$\neg$ Olivier went to his place
(8)	$\exists x$ . x went to his place	$\neg \exists x$ . x went to his place
(10)	$\neg$ (Olivier went to his place)	$\neg$ (Olivier went to his place)
(11)	$\exists x$ . $\neg$ (x went to his place)	$\neg \exists x$ . $\neg$ (x went to his place)
(19)	$\forall w' \in \text{BOUL}_{w,x}$ $\neg$ x finishes x's plate in w'	$\forall w' \in \text{BOUL}_{w,x}$ $\neg$ x finishes x's plate in w'

- If we assume that *non* always contributes semantic negation, then the generalization can be recast as (22).

(22) Descriptive generalization (final version)

*non* (i) negates its antecedent and, (ii) cancels clausal negation in its antecedent unless doing so would change its meaning

- a.  $\llbracket \text{que } non \llbracket_{prej} \text{ NEG } (\exists/\forall) p \rrbracket \rrbracket = \neg(\exists/\forall)p$   $\leftarrow non_{agree}$
- b.  $\llbracket \text{que } non \llbracket_{prej} (\exists/\forall \text{ NEG}) p \rrbracket \rrbracket = \neg\exists/\forall\neg p$   $\leftarrow non_{reverse}$

- In the next section, I propose an account that derives this generalization from independently motivated principles.

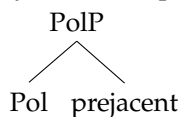
## 4 Analytical proposal

### 4.1 Theoretical background

**PRPs are the realization of a Pol head**

- I assume that PRPs in French are the spell out of a Pol head which takes a clause as its complement (23) (Roelofsen and Farkas, 2014; Pasquereau, 2018). Only reactive assertions have a Pol head.

(23) Syntax of Responses containing Polar Response Particles



<sup>6</sup>In a purely semantic analysis, the neg-raising facts would show that *non* does not have access to the post-entailment meaning.

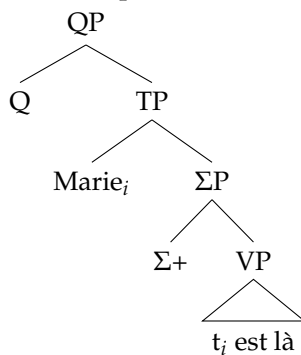
- Following Pope 1976; Roelofsen and Farkas 2014, the Pol head is the seat of two types of information: it encodes the polarity of the response and it encode whether the response agrees with the antecedent or reverses it.<sup>7</sup>
- Next, I explain how Pol comes to reflect these two types of information

### Sentences have a $\Sigma$ head

- Following Sailor 2012; Kramer and Rawlins 2011; Roelofsen and Farkas 2014; Gribanova 2017, I assume that every sentence has a head with a polarity feature which is valued positively or negatively. I call this head  $\Sigma$ . Thus the question in (24a) has the LF in (24b).

(24) Question

- Est-ce que Marie est là ? 'Is Marie here?'
- LF of the question in a.



- On the semantic side, I assume that an interpretable positively-valued  $\Sigma$  head is an identity function whereas an interpretable negatively-valued  $\Sigma$  head takes a proposition and reverses its polarity (25).

- (25) a.  $[[\Sigma+]] = \lambda p.p$   
 b.  $[[\Sigma-]] = \lambda p.\neg p$

### $\Sigma$ head-moves to Pol

- Following Gribanova 2017, I assume that (i) Pol must AGREE with a  $\Sigma$  head which then must undergo head movement to Pol<sup>8,9</sup>(under the copy theory of movement, Chomsky 1992) and that (ii) the higher copy of  $\Sigma$  is interpreted. (all cases considered here have TP ellipsis so lower copy is never pronounced)

(26) Syntax of Polar Responses

A: Est-ce que Marie n'est pas venue ? 'Did Marie not come?'

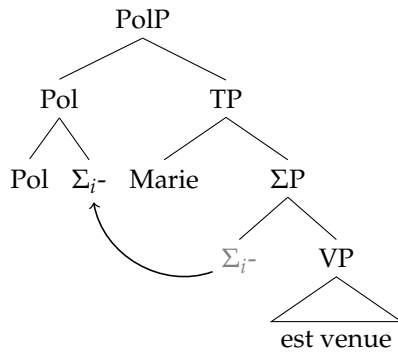
B: Je crois que non. 'I think that she didn't.'

<sup>7</sup>In Roelofsen and Farkas, 2014's terminology, it hosts two features: one absolute feature and one relative feature.

<sup>8</sup> The reader may object that  $\Sigma$ -to-Pol head movement does not respect the Head Movement Constraint since T stands above  $\Sigma$  but below Pol.<sup>8,9</sup>(under the copy theory of movement, Chomsky 1992) and that (ii) the higher copy of  $\Sigma$  is interpreted. (all cases considered here have TP ellipsis so lower copy is never pronounced)

<sup>9</sup>Another exceptional thing about Pol-to- $\Sigma$  movement is it does not leave behind a trace.

LF of B:



- Both claims are independently made and argued for in Gribanova 2017 in order to account for the different realizations of polarity focus in Russian.
- I assume that Pol has the denotation in (27) and combines with  $\Sigma$  via function application.<sup>10</sup>

(27)  $[[\text{Pol}]] = \lambda q_{\langle st, st \rangle} . q_{\langle st, st \rangle}$

- Pol is an identity function on  $\Sigma$ : it combines with  $\Sigma$  and returns exactly that  $\Sigma$

### Two types of Pol heads

- Following Roelofsen and Farkas 2014 but in the vein of Gribanova 2017, I assume that there are two Pol heads in French: one marked with a feature [reverse],  $\text{Pol}_{\text{reverse}}$ , and another marked with a feature [agree],  $\text{Pol}_{\text{agree}}$ . The relative features encode a presupposition that the whole PolP must satisfy.

(28) Presuppositions of Pol heads (adapted from Roelofsen and Farkas 2014)

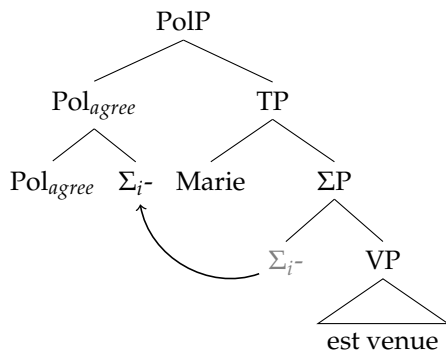
- $\text{Pol}_{\text{agree}}$  presupposes that PolP denotes a proposition  $\alpha$  and that the context provides a salient constituent XP which denotes the antecedent proposition  $\beta$  such that  $\alpha$  and  $\beta$  contain precisely the same possible worlds<sup>11</sup>
- $\text{Pol}_{\text{reverse}}$  presupposes that PolP denotes a proposition  $\alpha$  and that the context provides a salient constituent XP which denotes the antecedent proposition  $\beta$  such that  $\alpha$  is the complement of  $\beta$

- Thus, the example in (26), repeated in (29), has the syntax in (29a) and the interpretation in (29b).

(29) A: Est-ce que [Marie n'est pas venue] <sub>$\beta$</sub>  ? 'Did Marie not come?'

B: Je crois que [non] <sub>$\alpha$</sub> . 'I think that she didn't.'

a. LF of B:



<sup>10</sup>A consequence of positing this denotation for Pol is that copy/movement of  $\Sigma$  to Pol and its interpretation in the high position is necessary for the structure to be interpretable.

<sup>11</sup>This is a simplified definition. The full one would need to specify "and such that the highest  $\Sigma$  head in XP has the same value as the highest  $\Sigma$  head in PolP". The reason for this is beyond the scope of this talk.

- b.  $\llbracket \text{PolP} \rrbracket = \neg(\text{Marie has come})$ , defined only if PolP denotes a proposition  $\alpha$  and the context provides a salient constituent XP which denotes the antecedent proposition  $\beta$  such that  $\alpha$  and  $\beta$  contain precisely the same possible worlds

### Realizational rules in French

- Based on the description of the data in section 2 and Pasquereau 2018, I assume the realizational rules in (30) for French embedded bare PRPs.

(30) Realizations of head combinations in French as bare unaccentuated PRPs

	$\Sigma+$	$\Sigma-$
Pol <sub>agree</sub>	oui	non <sup>12</sup>
Pol <sub>reverse</sub>	si <sup>13</sup>	non

### Licensing of ellipsis

- I assume that the coda that is the complement of Pol can be elided under semantic identity with an antecedent, i.e. some constituent in the preceding discourse. I use Merchant 2001's E-givenness notion of semantic identity (31).

(31) Definition of E-givenness (Merchant, 2016)

A expression  $\epsilon$  is e-GIVEN iff  $\epsilon$  has a salient antecedent A such that  $\llbracket A \rrbracket = \text{F-clo}(\epsilon)$  and  $\llbracket \epsilon \rrbracket = \text{F-clos}(A)$

(32) Definition of (existential) F-closure of  $\epsilon$  (Schwarzschild, 1999)

$\text{F-clo}(\epsilon)$  = the result of replacing F-marked phrases in  $\epsilon$  with variables and existentially closing the result, modulo existential type shifting.

- Notice that the definition licenses PF deletion of the preajacent under semantic identity not necessarily with the whole antecedent TP but with **some** antecedent (see Krifka 2013; Snider 2017 for evidence that this constituent can be smaller than the (maximal possible) antecedent constituent). In particular, this can be the complement of  $\Sigma$ .<sup>14</sup>
- I withhold one last piece of information (covert  $\Sigma$  insertion) that I will mention when we come to the relevant example

<sup>12</sup>Clause-peripheral *oui* can also be used to agree with a negative antecedent. Bare *oui* is marginal.

<sup>13</sup>Other PRPs can be used to reverse a negative antecedent. However where and in what shape they can be used is subject to very specific conditions. For instance,

- *non* can also be used to reverse a negative antecedent but only clause-peripherally (or marginally bare with a strong accent)
- *oui* can also be used in very specific constructions/conditions to reverse the polarity of a negative antecedent: e.g. bare or clause-peripheral in response to assertions

For more details, see Pasquereau 2018.

<sup>14</sup>Just like different constituents can introduce different discourse referents, an elided constituent can be interpreted with respects to different parts of its antecedent. In particular, given a negated sentence preceding an elided structure, either the full negative antecedent can be retrieved as in (33a) or just its preajacent as in (33b).

- (33) a. Soit vous n'avez pas empêché ce crime et vous expliquez pourquoi ~~<vous n'avez pas empêché ce crime>~~, soit vous n'avez rien à vous reprocher et vous témoignez. 'Either you didn't prevent this crime and you explain why, or you don't have anything to reproach yourself with and you can testify.'
- b. Soit vous n'avez pas commis ce crime, soit vous nous expliquez pourquoi ~~<vous avez commis ce crime>~~. 'Either you didn't commit this crime, or you tell us why.'

## 4.2 Analysis

### 4.2.1 Basic cases (no quantifier)

- In response to a negative question that does not contain a scope-bearing expression (other than negation), a *non* response has the structure in (34)

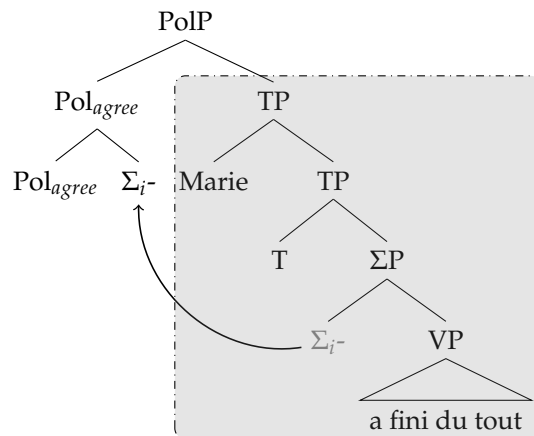
(34) **Negative Q, non answer, agree**

A: Est-ce que Marie n'a pas fini du tout ? 'Did Marie not finish at all?'

B: Je crois que non. 'I think that she didn't.'

- a. LF of A: [ Q [TP [ Σ- [VP Marie<sub>i</sub> a fini du tout ] ] ] ]  
 [[TP]] = ¬Marie didn't finish at all

- b. LF of B:



[[PolP]] = ¬Marie finished at all

- Σ moves to Pol
- presupposition of Pol<sub>agree</sub> is met since [[PolP]] is equal to [[TP]] in the antecedent.
- Pol is spelled out as *non*, as per the morphophonological rules in section 3.2
- TP in the response can be elided since it is E-given w.r.t. the VP constituent in the question (remember that only the highest copy of Σ is interpreted).

- The same *non* response to a positive question like (35) is always reversing.<sup>15</sup>

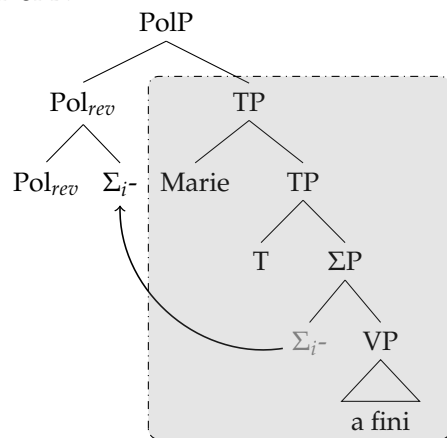
(35) **Positive Q, non answer, reverse**

A: Est-ce que Marie a fini ? 'Did Marie finish?'

B: Je crois que non. 'I think that she she didn't.'

- a. LF of A: [ Q [TP [ Σ+ [VP Marie<sub>i</sub> a fini ] ] ] ]  
 [[TP]] = Marie finished

- b. LF of B:



[[PolP]] = ¬Marie finished

- Σ moves to Pol and is interpreted there.
- presupposition of Pol<sub>rev</sub> is met since [[PolP]] is equal to the negation of [[TP]] in the antecedent.
- Pol is spelled out as *non*, as per the morphophonological rules in section 3.2
- Ellipsis is possible since TP in the response is E-given with respect to TP or VP in the antecedent (only the highest copy of Σ is interpreted).

! Anything can potentially be generated next to Pol as long as the presupposition of Pol is met

<sup>15</sup>My system predicts that a bare-*non*-response to a positive question can have another underlying structure involving the insertion of covert negation.

- If in (35B)  $Pol_{agree}$  had been merged instead of  $Pol_{rev}$ , the agree presupposition would not have been met since  $\llbracket PolP \rrbracket = \neg Marie\ finished$  and the antecedent  $\llbracket TP \rrbracket = Marie\ finished$ .

#### 4.2.2 Quantificational operators outscoping negation

- Consider (36) where *quelqu'un* 'someone' is interpreted above clausal negation, the *non*-response must reverse its antecedent

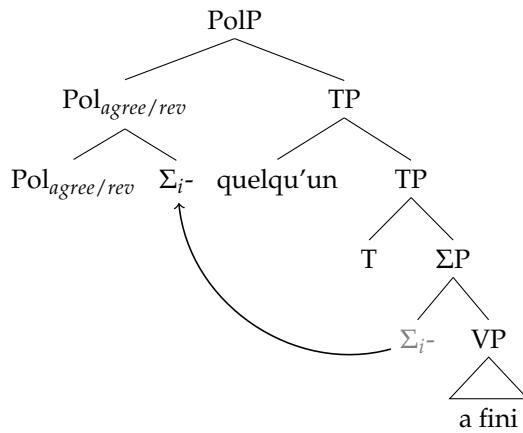
(36) **Negative Q, non answer, ellipsis, infelicitous response LF**

A: Est-ce que quelqu'un n'a pas fini du tout ? 'Did someone not finish at all?'

B: Je crois que non. 'I think that everyone has.'

- a. LF of A: [ Q [  $TP$  quelqu'un [  $TP$  [  $\Sigma^-$  [  $VP$  a fini du tout ] ] ] ] ]  
 $\llbracket TP \rrbracket = \exists x. \neg(x\text{ has finished})$

- b. Infelicitous LF of B: neither agree nor reverse presupposition is met



$\llbracket PolP \rrbracket = \neg(\exists x. x\text{ has finished})$

–  $\Sigma$  moves to Pol and is interpreted there.

– However, the structure is infelicitous

\* presupposition of  $Pol_{agree}$  is not met since  $\llbracket PolP \rrbracket$  is not equal to  $\llbracket TP \rrbracket$  in the antecedent.

\* presupposition of  $Pol_{rev}$  is not met since  $\llbracket PolP \rrbracket$  is not equal to the negation of  $\llbracket TP \rrbracket$  in the antecedent.

– Rescue strategy: insertion of covert  $\Sigma$



#### Covert $\Sigma$ insertion as a last resort

- Following Ovalle and Guerzoni 2004; Zeijlstra 2008; Fălăuș and Nicolae 2016, I assume that Covert Negation (Covert  $\Sigma^-$  here) can be inserted in a high projection.
- In fact, I extend this assumption to both  $\Sigma^-$  and  $\Sigma^+$
- Covert  $\Sigma^-$  and  $\Sigma^+$  have the same denotation as overt clausal  $\Sigma^-/\Sigma^+$ .
- I follow Fălăuș and Nicolae 2016 in assuming that Covert  $\Sigma$  insertion is a last resort rescuing mechanism limited to elliptical constructions.

- The only felicitous structure (b) is one where Covert  $\Sigma$  has been inserted<sup>16</sup>

<sup>16</sup>The reader may wonder whether the underlying structure of the bare-*non*-response in (36) could be the structure corresponding to *non, tout le monde fini* 'no, every one has finished'. It could not because the prejacent would not be E-given.

(37) **Negative Q, non answer, ellipsis, felicitous response LF**

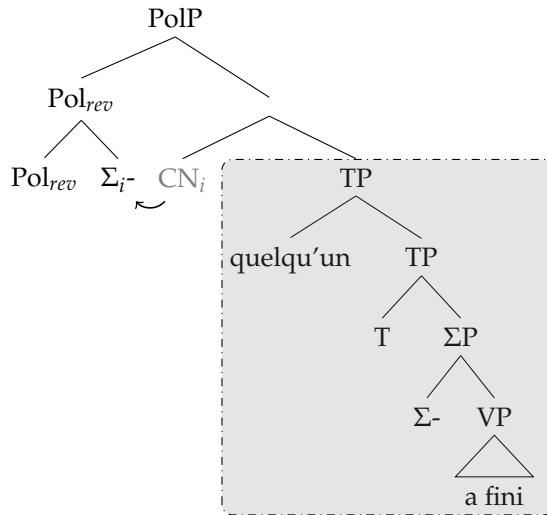
A: Est-ce que quelqu'un n'a pas fini du tout ? 'Did someone not finish at all?'

B: Je crois que non. 'I think that everyone has.'

a. LF of A: [ Q [TP quelqu'un [TP [Σ- [VP a fini du tout ] ] ] ] ] ]

[[TP]] =  $\exists x. \neg(x \text{ has finished})$

b. LF of B:



[[PolP]] =  $\neg(\exists x. \neg x \text{ has finished})$

– covert Σ- is inserted, i.e. CN

– covert Σ- moves to Pol and is interpreted there.

– presupposition of Pol\_rev is met since [[PolP]] is equal to the negation of [[TP]] in the antecedent.

– Pol is spelled out as *non*, as per the morphological rules in section 3.2

– Ellipsis is possible since TP in the response is E-given with respect to TP in the antecedent, see below

- Another example of a quantificational operator forcing reversal *non* is (39) where negation is interpreted in the scope of the focus-sensitive operator *seul* 'only'. In (39), the adverb *seul* 'only' associates with the focussed argument *Marie*. I assume following Rooth 1992 / Horn 1996 that *seul* 'only' contributes universal quantification and has the meaning in (38).

(38) [[seule Marie]] =  $\lambda P.P(\text{Marie}) \ \& \ \forall x \in \text{ALT}(\text{Marie}): P(x) \rightarrow x = \text{Marie}$  (Büring and Hartmann, 2001, p. 248)

- Here again, a *non*-response cannot agree or reverse without the insertion of covert Σ

(39) **Negative Q, non answer, reverse**

Context: Everybody's gone from the table. All the plates are empty except one.

A: Est-ce que [TP seule Marie n'a pas fini son assiette] ? 'Did only Marie not finish her plate?'

B: Je crois que non. 'I think that it's not the case that only Marie didn't finish her case.'

a. LF of A: [ Q [TP seule Marie [TP [Σ- [VP a fini son assiette ] ] ] ] ] ]

[[TP]] =  $\neg(\text{Marie finished her plate}) \ \& \ \forall x \in \text{ALT}(\text{Marie}): \neg(x \text{ finished } x\text{'s plate}) \rightarrow x = \text{Marie}$

b. Infelicitous LF of B: neither agree nor reverse presupposition is met

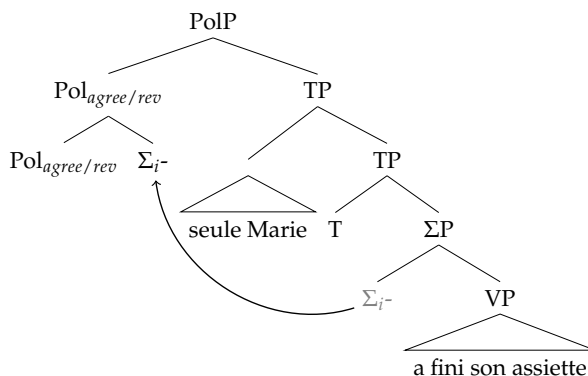
– Σ moves to Pol and is interpreted there.

– However, the structure is infelicitous

\* presupposition of Pol\_agree is not met since [[PolP]] is not equal to [[TP]] in the antecedent.

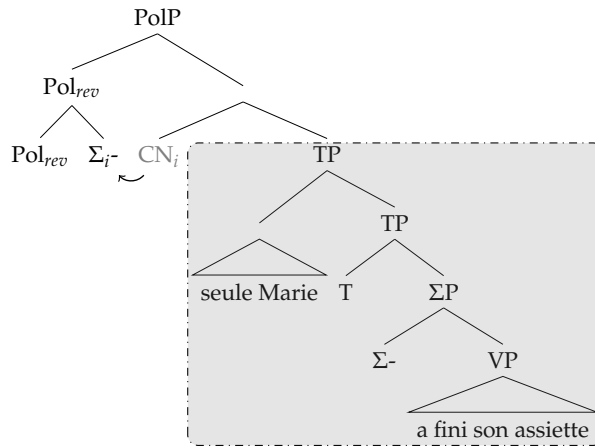
\* presupposition of Pol\_rev is not met since [[PolP]] is not equal to the negation of [[TP]] in the antecedent.

– Rescue strategy: insertion of covert Σ



$\llbracket \text{PolP} \rrbracket = \neg[\text{Marie finished her plate} \ \& \ \forall x \in \text{ALT}(\text{Marie}): x \text{ finished } x\text{'s plate} \rightarrow x = \text{Marie}]$

c. Felicitous LF



- covert  $\Sigma^-$  is inserted, i.e. CN
- covert  $\Sigma^-$  moves to Pol and is interpreted there.
- presupposition of  $\text{Pol}_{rev}$  is met since  $\llbracket \text{PolP} \rrbracket$  is equal to the negation of  $\llbracket \text{TP} \rrbracket$  in the antecedent.
- Pol is spelled out as *non*, as per the morphophonological rules in section 3.2
- Ellipsis is possible since TP in the response is E-given with respect to TP in the antecedent, see below

$\llbracket \text{PolP} \rrbracket = \neg[\neg(\text{Marie finished her plate}) \ \& \ \forall x \in \text{ALT}(\text{Marie}): \neg(x \text{ finished } x\text{'s plate}) \rightarrow x = \text{Marie}]$



### Upshot

- The fact that *non* cannot convey agree is explained in the current analysis because interpreting sentential negation in Pol would change the scope relation between the universal quantifier that *seul* 'only' contributes and negation.
- This would in turn fail to satisfy either the agree or reverse presupposition of the Pol head, which requires (some) identity between the antecedent and *non(p)*
- In such cases, the only way to salvage the structure is to insert Covert Negation ( $\Sigma^-$ ), which necessarily reverses the antecedent

### 4.2.3 Specificity of indefinite quantifiers

- In the examples with *quelqu'un*, *quelqu'un* was interpreted as a true non-referential quantifier.
- However, the context can be such that *quelqu'un* is interpreted referentially/specifically (40). In this case, a *non* response can convey agree.

(40) Context: A mother and a father are talking and staring at their little child, Casimir, just before having lunch.

A: Est -ce que *quelqu'un* ne s' est pas lavé les mains de la matinée ?

is it that someone NEG REFL is NEG washed the hands of the morning

'Has someone not washed his hands this morning?'



B: Je crois que non, (quelqu'un ne s' est pas lavé les mains de la matinée).

I think that no someone NEG REFL is NEG washed the hands of the morning

'I think that someone has not.'

- In fact this is similar to how a *non*-response to a negative question containing the determiner *un certain* – which is specific – must be interpreted.

(41) Context: A mother and a father are talking and staring at their little child, Casimir, just before having lunch.

A: Est -ce qu' un certain petit garçon ne s' est pas lavé les mains de la matinée ?

is it that a certain little boy NEG REFL is NEG washed the hands of the morning

'Has a certain little boy not washed his hands this morning?'

B: Je crois que non, (un certain petit garçon ne s' est pas lavé les mains de la matinée).

I think that no a certain little boy NEG REFL is NEG washed the hands of the morning

'I think that a certain little boy has not.'

- I account for the contrast in the interpretation of *non*-responses as a function of the specificity of *quelqu'un* 'someone' in the same terms as Fodor and Sag 1982: I assume that non-referential *quelqu'un* has quantificational force whereas specific *quelqu'un* does not.
- As a result, specific *quelqu'un* does not participate in scope ambiguity with negation.
- Thus when, in a *non*-response,  $\Sigma$ - moves to Pol and is interpreted above specific *quelqu'un* the truth-conditions remain the same as if it had been interpreted below. In order to show this I use Kratzer 1998's implementation.
- In Kratzer 1998 indefinites are ambiguous between quantificational indefinites and specific indefinites, which are analyzed as free variables  $f$  (over functions) whose value is provided by the context.
- The variable  $f$  takes an implicit argument and maps it into a contextually determined choice function. Because these variables do not get existentially closed, they do not give rise to truth-conditional ambiguities. Following Kratzer 1998 I give the denotation I assume for specific *quelqu'un* in (42).

(42)  $\llbracket \text{un certain petit garçon} \rrbracket = f_n(\text{little-boy})$

- Thus in (42), the contextually determined value for the variable  $f$  is a function that maps the speaker (referent of the implicit argument of  $f$ ) into a choice function that is defined for just one argument, the set of all little boys, and picks Casimir from that set.
- Thus we can model the LF and truth-conditions of (40/41) as in (43).
- I assume that specific *quelqu'un* has the same interpretation as *un certain petit garçon* in the context in (40/41) and the restrictor/domain of the choice function is provided by context.

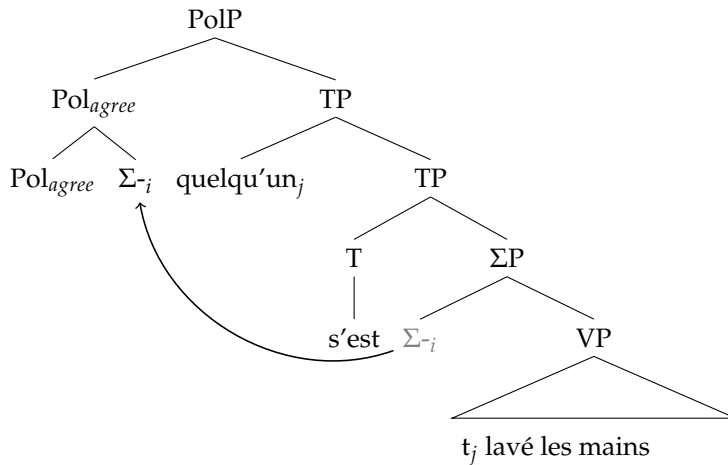
(43) **Negative Q with specific indefinite, non answer**

Context: A mother and a father are talking and staring at their little child, Casimir, just before having lunch.

A: Est-ce que quelqu'un ne s'est pas lavé les mains de la matinée ?

B: Je crois bien que non, (quelqu'un ne s'est pas lavé les mains de la matinée).

- a. LF of A: [ Q [TP quelque'un [TP [ Σ- [VP s'est lavé les mains ... ] ] ] ] ]  
 [[TP]] = ¬Casimir washed his hands
- b. LF of B:



[[PolP]] = ¬Casimir washed his hands

- Thus in examples where *quelqu'un* is interpreted specifically, the indefinite receives a referential interpretation and is thus insensitive to the scope of negation. Whether negation is interpreted low or high yields the same truth-conditions which satisfies the presupposition of  $Pol_{agr}$ .

## 5 Conclusion

- I have discussed a new pattern of data involving the interpretation of the PRP *non* in European French.
- I have proposed a new analysis of their syntax and semantics that models the interaction of PRPs with scope-bearing operators that can create truth-conditional ambiguities
- In summary, the analysis I have proposed captures the generalization that (i) *non* is always semantically negative, and (ii) negation in the preajcent of a PRP is cancelled unless this would prevent the presupposition of  $Pol_{agree}$  or  $Pol_{reverse}$  from being satisfied.
- The analysis also correctly captures the meaning of clause-peripheral *non* which behaves like bare *non* except in two cases:
  - Since the coda is not elided, the E-givenness requirement is not active, allowing for a wider array of clauses to follow Pol
  - Since there is no ellipsis, Covert Negation cannot be inserted
- In addition, it also predicts a number of related patterns (not shown here)
  - Purported cases of low negation in English (Holmberg, 2013)
  - Bare adverb responses to polar questions (Kramer and Rawlins, 2011)
  - N-word fragment responses to negative wh-questions

## References

- Bartsch, R. (1973). "Negative transportation" gibt es nicht. *Linguistische Berichte* 27(7), 1–7.
- Büring, D. and K. Hartmann (2001). The syntax and semantics of focus-sensitive particles in gGerman. *Natural Language & Linguistic Theory* 19(2), 229–281.

- Chomsky, N. (1992). A Minimalist Programme for Linguistic Theory. MIT Occasional Papers in Linguistics No. 1.
- Fălăuș, A. and A. Nicolae (2016). Fragment answers and double negation in strict negative concord languages. In *Semantics and Linguistic Theory*, Volume 26, pp. 584–600.
- Fodor, J. D. and I. A. Sag (1982). Referential and quantificational indefinites. *Linguistics and philosophy* 5(3), 355–398.
- Gribanova, V. (2017). Head movement and ellipsis in the expression of russian polarity focus. *Natural Language & Linguistic Theory* 35(4), 1079–1121.
- Harizanov, B. and V. Gribanova (2018). Whither head movement? *Natural Language & Linguistic Theory*, 1–62.
- Holmberg, A. (2013). The syntax of answers to polar questions in English and Swedish. *Lingua* (128), 31–50.
- Kramer, R. and K. Rawlins (2011). Polarity particles: an ellipsis account. In *NELS* 39.
- Kratzer, A. (1998). Scope or pseudoscope? Are there wide-scope indefinites? In *Events and grammar*, pp. 163–196. Springer.
- Krifka (2000). Alternatives for aspectual particles: Semantics of still and already. In *Annual Meeting of the Berkeley Linguistics Society*, Volume 26, pp. 401–412.
- Krifka, M. (2013). Response particles as propositional anaphors. In *Proceedings of SALT 23*, pp. 1–18.
- Ladusaw, W. (1978). The scope of some sentence adverbs and surface structure. In *Proceedings of NELS*, Volume 8, pp. 97–111.
- Ladusaw, W. (1979). *Polarity sensitivity as inherent scope relations*. Ph. D. thesis, University of Texas, Austin.
- Löbner, S. (1989). German schon - erst - noch: an integrated analysis. *Linguistics and Philosophy* 12, 167–212.
- Merchant, J. (2001). *The Syntax of Silence: Shuicing, Islands, and the Theory of Ellipsis*. Oxford University Press.
- Merchant, J. (2016). Ellipsis: a survey of analytical approaches. In J. van Craenenbroeck and T. Temmerman (Eds.), *A handbook of ellipsis*. OUP.
- Ovalle, L. A. and E. Guerzoni (2004). Double negatives, negative concord and metalinguistic negation. *Proceedings of CLS* 38(1), 15–31.
- Pasquereau, J. (2018). *Responding to questions and assertions: embedded Polar Response Particles, ellipsis, and contrast*. Ph. D. thesis, U.
- Pope, E. (1976). *Questions and Answers in English*. Mouton, The Hague.
- Roelofsen, F. and D. Farkas (2014). Polarity particle responses as a window onto the interpretation of questions and assertions. *Language*.
- Rooth, M. (1992). A theory of focus interpretation. *Natural Language Semantics* 1, 75–116.
- Sailor, C. (2012). On embedded Polar Replies. Handout of a talk given at the Workshop on the Syntax of Answers to Polar Questions at Newcastle University.
- Schwarzschild, R. (1999). 'Givenness, AvoidF and Other Constraints on the Placement of Accent.'. *Natural Language Semantics* 7, 141–177.
- Snider, T. N. (2017). *Anaphoric Reference to Propositions*. Ph. D. thesis, Cornell University.
- Zeijlstra, H. (2008). Negative concord is syntactic agreement. Ms., University of Amsterdam.

# Appendices

## A Aspectual adverbs and negation

- This section examines the influence of the relative scope of the aspectual adverb *toujours* ‘still’ and clausal negation on the meaning of *non* responses
- *toujours* ‘still’ is a PPI and must take scope above negation, therefore we might expect that, like other scope-bearing operators, it blocks the use of *non<sub>agree</sub>*. But it does not: the *agree* reading is the only one available (with unstressed bare *non*)

(44) A: Est -ce que Tom n’ a toujours pas commencé son article du tout ? (neg > encore)  
 is it that Tom NEG has STILL NEG yet started his paper at all

*Has Tom still not started his paper at all?*

B: Je crois que non (toujours > neg)

*agree: I think that he has still not started his paper at all.*

*\*rev: I think that he has started it.*

- What’s going on? The adverb *toujours* ‘still’ is not quantificational; see (45/46) following Ladusaw 1978, 1979 and Löbner 1989 as cited in Krifka 2000.

(45) STILL(t, p)

a. assert: p(t)

b. presupposes:  $\exists t' < t. p(t')$

(46) not STILL(t, p)

a. assert:  $\neg p(t)$

b. presupposes:  $\exists t' < t. \neg p(t')$

- Consistently with the scope-preservation generalization, STILL ‘*toujours*’ does not create a truth-conditional ambiguity: whether it is interpreted below or above negation, the truth-conditions of the sentence it is in do not change (47)

### (47) Negative Q with aspectual adverb, *non* answer

A: Est -ce qu’ elle n’ a toujours rien mangé ? ‘Has she still not eaten anything?’

B: Je crois que non. ‘I think that she hasn’t.’

a. LF of A: [ Q [ STILL [  $\Sigma^-$  [ elle a mangé rien ] ] ] ]

[[TP]] =  $\neg \exists x. \text{she ate } x$

b. LF of B: [<sub>PolP</sub> [<sub>Pol<sub>agree</sub></sub> Pol<sub>agree</sub>  $\Sigma^-$ ] [ STILL [  $\Sigma^-$  [ elle a mangé rien ] ] ] ]

- Problem: interpreting STILL under negation changes the presupposition of the proposition