

Polar responses to quantified utterances*

Jérémy Pasquereau
Surrey Morphology Group

21 May 2019

I show and provide an explanation for the fact that the denotation of the Polar Response Particle *non* 'no' 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 [questioned proposition] in A¹

(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 questioned proposition *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 informants for French and English. All errors are my own.

¹I'm only talking of unaccentuated *non* here; the reverse reading, but not the agree reading, is marginally possible with contrastively accented 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 question	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.
- 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 marking semantic objects as either positive or negative (as in Roelofsen and Farkas 2014)
- Claim: PRPs do not allow scope reversal in their scope.

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

2 Generalities about French PRPs

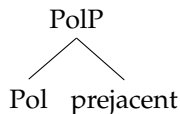
- Consider the three Polar Response Particles²: *oui*, *non*, *si*.
- They are used to respond to two types of ‘discourse initiatives’ (Roelofsen and Farkas, 2014): questions (5A1) and assertions (5A2).
- They can appear embedded or not, bare (5B1/B4), accompanied by a fragment (5B2/B5), or at the periphery of a full clause (5B3/B6).

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

- (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.
- B2: Tom non.
 Tom no
Tom will not come.
- B3: Non, ils ne vont pas venir.
 no they NEG will NEG come
No, they will not come.
- B4: Je pense que non.
 I think that no
I think that they will not come.
- B5: Je pense que Tom non.
 I think that Tom no
I think that Tom 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.

- 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 preajcent has been elided) that respond to questions.
- 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.

– 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</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

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: Jean invited his friends for dinner at his place. Apparently, he is sad today.

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 NEG 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 (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
(10)	$\neg(\text{Olivier went to his place})$	$\neg(\text{Olivier went to his place})$
(11)	$\exists x. \neg(x \text{ went to his place})$	$\neg \exists x. \neg(x \text{ went to his place})$
(12)	$\neg(\exists x. x \text{ went to his place})$	$\neg(\exists x. x \text{ went to his place})$

- 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).

(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)

(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).³ I summarize the data in (17).

(17) Summary table for unstressed bare *non*

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

³ See 'database' available at <https://jeremy-pasquereau.jimdo.com>

- 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.⁴
- 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*): $\neg(\exists x(\neg(\exists y. x \text{ has done } y)))$

- I have remained agnostic as to which level of representation – e.g. syntactic or semantic – the descriptive generalization should be stated at⁵
- In all the cases examined until this point, semantic and syntactic scope have been aligned.
- In order to tease apart this question, I look at a case of misalignment between semantic and syntactic scope of negation: examples containing negated neg-raising predicates, where negation is out of the syntactic scope of the quantificational operator but interpreted within its semantic scope.

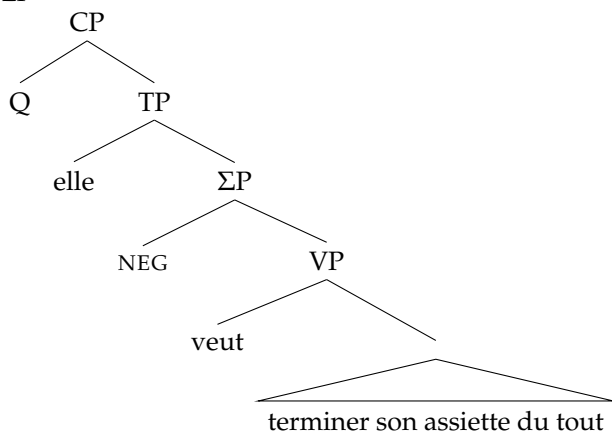
3.3 Neg-raising: the generalization should be stated at LF

- If we assume the excluded-middle analysis of neg-raising (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. $\llbracket \text{TP} \rrbracket = \forall w' \in \text{BOUL}_{w,x} \neg (x \text{ finishes } x\text{'s plate in } w')$

⁴I thank Donka Farkaš for suggesting that I look at these configurations.

⁵Although, we know that the scope relation that matters is not only the one that holds semantically in the denotation of the antecedent since after all $\forall \neg = \neg \exists$ but those scope relations yield different response patterns with *non*.

- Let's entertain for the sake of argument that the generalization in (14) could be stated in terms of semantic scope relations.
- Since, according to the excluded-middle analysis of neg-raising (Bartsch, 1973), neg-raising predicates constitute a case where semantic and syntactic scope come apart, 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 wants not 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 *it is not the case that she wants not to finish her plate at all*.

(20) Je crois que non.

I believe that no

- Interpretation as predicted by LF generalization: *non_{agree}*
I think that she wants not to finish her plate at all.
- Interpretation as predicted by semantic negation generalization: *non_{reverse}*
* I think that it is not the case that she wants not to finish her plate at all.

- The meaning of (20) is 'I think that she wants not 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 but not if it is stated purely in semantic terms.⁶
- Neg-raising predicates show that the generalization must have access to the syntactic representation of the scope relations.

3.4 Non-quantificational scope-bearing operators: the generalization should be stated in the semantics

- This section examines the influence of the relative scope of aspectual adverbs and clausal negation on the meaning of *non* responses⁷
- The adverb *toujours* with the meaning 'still' is a PPI
- This is perhaps most apparent in fragment answers to polar questions. The sequence *pas toujours* can only mean 'not always', *toujours* must appear before *pas* to mean 'still', otherwise the word *encore* 'yet' is used.

(21) Est -ce que tu as reçu ton colis aujourd'hui ?

is it that you have received your package today

Did you receive your package today?

- Toujours pas 'Not yet'
- # Pas toujours
- Pas encore. 'Not yet'

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

⁷Thank you to Vincent Homer for drawing my attention to these adverbs.

- A *non*-answer to a negative question containing *encore* asserts the negative antecedent, as expected since negation is the highest scope-bearing operator in the antecedent.

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

Has Tom not started his paper at all?

B: Je crois que non (neg > encore)

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

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

- Given that *toujours* 'still' must take scope above negation, we might expect that, like other scope-bearing operators, it blocks the use of *non_{agree}*. But it does not: the *agree* reading is the only one available (with unstressed bare *non*)

(23) 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 and does not create a truth-conditional ambiguity. The analysis must then differentiate between scope-bearing operators that create a truth-conditional ambiguity and those that do not.

3.5 Summary

- The observations above can be summarized as in (24).

(24) 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'
(22)	\neg (Tom has started his paper) + pres	\neg (Tom has started his paper) + pres

- If we assume that *non* always contributes semantic negation, then the generalization can be recast as (25).

(25) Descriptive generalization (final version)

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

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

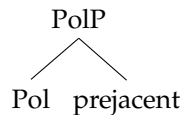
4 Analytical proposal

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 (26) (Roelofsen and Farkas, 2014; Pasquereau, 2018). Only reactive assertions have a Pol head.

(26) Syntax of Responses containing Polar Response Particles



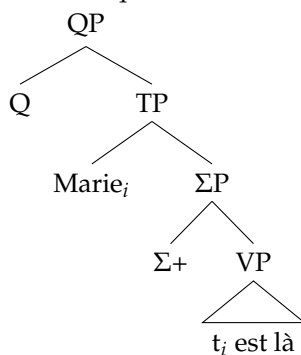
- Following Pope 1976; Roelofsen and Farkas 2014, the Pol head is the seat of two types of information: it encodes the polarity of the prejaçant and it encode whether the prejaçant agrees with the antecedent or reverses it.⁸
- Next, I explain how Pol comes to reflect these two types of information

Σ moves to Pol

- 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 Σ . Thus the question in (27a) has the LF in (27b).

(27) 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 Σ head is an identity function whereas an interpretable negatively-valued Σ head takes a proposition and reverses its polarity (28).

- (28) a. $\llbracket \Sigma+ \rrbracket = \lambda p.p$
 b. $\llbracket \Sigma- \rrbracket = \lambda p.\neg p$

⁸In Roelofsen and Farkas, 2014’s terminology, it hosts two features: one absolute feature and one relative feature.

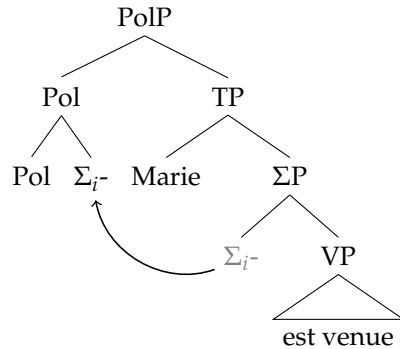
- Following Gribanova 2017, I assume that (i) Pol must AGREE with a Σ head which then must undergo head movement to Pol⁹ (under the copy theory of movement, Chomsky 1992) and that (ii) the higher copy of Σ is interpreted.

(29) 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.'

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 (30) and combines with Σ via function application.¹⁰

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

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.

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

- $\text{Pol}_{\text{agree}}$ presupposes that PolP denotes a proposition α and that the context provides a salient constituent XP which denotes the antecedent proposition β such that α and β contain precisely the same possible worlds¹¹
- $\text{Pol}_{\text{reverse}}$ presupposes that PolP denotes a proposition α and that the context provides a salient constituent XP which denotes the antecedent proposition β such that α is the complement of β

- Thus, the example in (29), repeated in (32), has the syntax in (32a) and the interpretation in (32b).

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

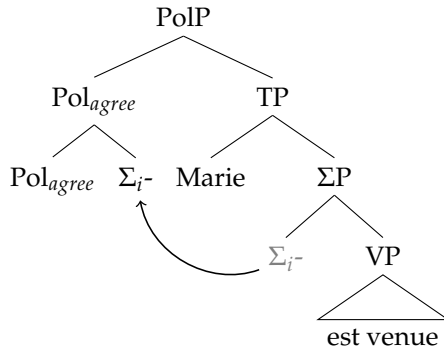
B: Je crois que non. 'I think that she didn't.'

⁹ The reader may object that Σ -to-Pol head movement does not respect the Head Movement Constraint since T stands above Σ but below Pol. First, see Harizanov and Gribanova 2018 for arguments that certain types of head movement do not respect the HMC. Second, it could be the case that Σ moves to T at PF and then is ex-corporated and moves to Pol at LF.

¹⁰ A consequence of positing this denotation for Pol is that copy/movement of Σ to Pol and its interpretation in the high position is necessary for the structure to be interpretable.

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

a. LF of B:



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

Realizational rules in French

- Based on the description of the data in section 2, I assume the rules in (33) for French PRPs.

(33) Realization potential for French particles

- Pol_{agree} and Σ₊ can be realized by *oui*
- Pol_{reverse} and Σ₋ can be realized by *non*
- $[\text{Pol}_{reverse}, \Sigma_+]$ is realized by *si*

- As a consequence of (33), the connection between the four possible feature combinations and the three PRPs in French is as in (34).

(34) Feature combinations and PRPs in French

- $[\text{Pol}_{agree}, \Sigma_+]$ can only be realized by *oui*
- $[\text{Pol}_{reverse}, \Sigma_-]$ can only be realized by *non*
- $[\text{Pol}_{agree}, \Sigma_-]$ can be realized by *non* (or peripheral *oui*¹²)
- $[\text{Pol}_{reverse}, \Sigma_+]$ can be realized by *si* (or peripheral *non*¹³)

Covert Σ insertion as a last resort

- Following Ovalle and Guerzoni 2004; Zeijlstra 2008; Fălăuș and Nicolae 2016, I assume that a Covert Polarity operator can be inserted in a high projection. This operator has the same semantics as clausal Σ₋/Σ₊.
- I follow Fălăuș and Nicolae 2016 in assuming that Covert Σ insertion is a last resort rescuing mechanism limited to elliptical constructions.

¹²An explanation of why a coda is required when *oui/non* mark agree/reverse with a negative clause must await further research. It does look tentatively similar to systems where absolute polarity features are realized independently from relative feature (as in Romanian and Hungarian) in that, when the coda is not elided, the PRP realizing the absolute feature can be left out as long as the PRP which realizes the relative feature is realized.

¹³Same as footnote 11.

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 (35).

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

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

(36) Definition of (existential) F-closure of ϵ (Schwarzschild, 1999)

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

- Notice that the definition licenses PF deletion of the prejacent 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 Σ .¹⁴

4.2 Analysis

4.2.1 Basic cases

- In response to a negative question that does not contain a scope-bearing expression (other than negation), a *non* response has the structure in (38)

(38) **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.'

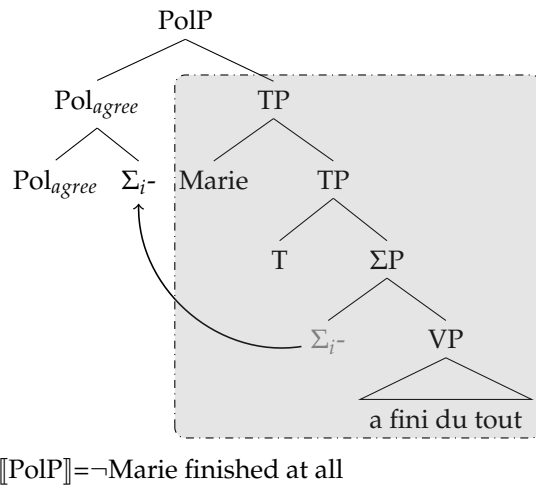
a. LF of A: [Q [TP [Σ^- [VP Marie; a fini du tout]]]]

$\llbracket TP \rrbracket = \neg$ Marie didn't finish at all

b. LF of B:

¹⁴Just 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 (37a) or just its prejacent as in (37b).

- (37) 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 témoigner. '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.'



- Σ moves to Pol
- presupposition of Pol_{agree} is met since $[[\text{PolP}]]$ is equivalent to $[[\text{TP}]]$ in the antecedent.
- Pol is spelled out as *non*, as per the morphological 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 (39) is always reversing.¹⁵

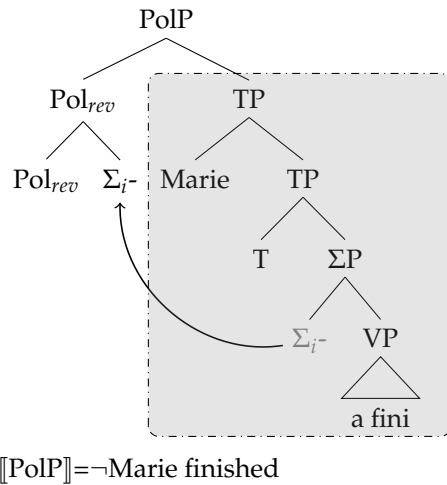
(39) **Positive Q, non answer, reverse**

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_i a fini]]]]
 [[TP]] = Marie finished

b. LF of B:



- Σ moves to Pol and is interpreted there.
- presupposition of Pol_{rev} is met since $[[\text{PolP}]]$ is equivalent to the negation of $[[\text{TP}]]$ 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 or VP in the antecedent (only the highest copy of Σ is interpreted).

- If in (39B) Pol_{agree} had been merged instead of Pol_{rev} , the agree presupposition would not have been met since $[[\text{PolP}]] = \neg\text{Marie finished}$ and the antecedent $[[\text{TP}]] = \text{Marie finished}$.

4.2.2 **Quantificational operators outscoping negation**

- Consider (40) where *quelqu’un* ‘someone’ is interpreted above clausal negation, the *non*-response must reverse its antecedent
- The only felicitous structure (b) is one where Covert Σ has been inserted¹⁶

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

¹⁶The reader may wonder whether the underlying structure of the bare-*non*-response in (40) could be the structure corresponding to *non, tout le monde fini* ‘no, every one has finished’. It could not because the preadjacent would not be E-given.

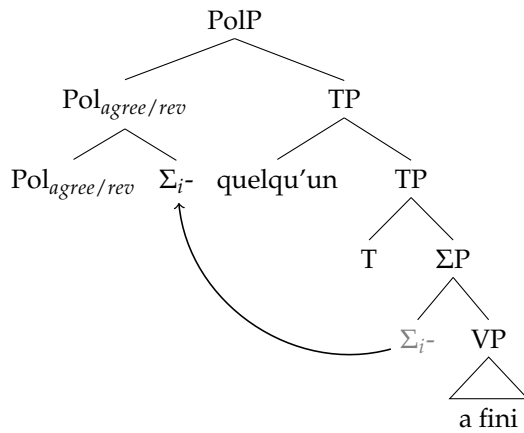
(40) **Negative Q, non answer, ellipsis**

A: Est-ce que $[_{TP}$ quelqu'un n'a pas fini du tout] ? 'Did someone not finish at all?'

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

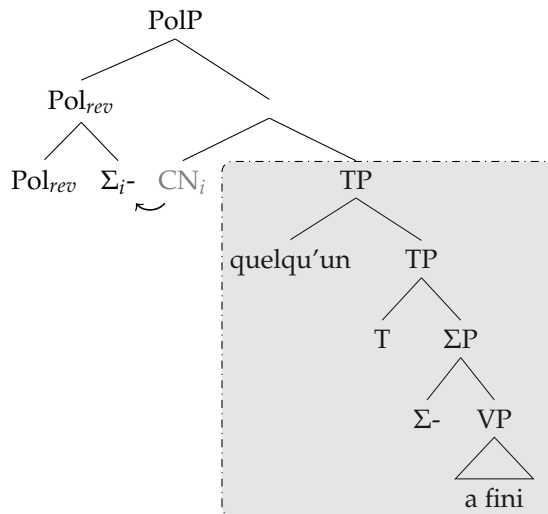
$[[TP]] = \exists x. \neg(x \text{ has finished})$

a. Infelicitous LF: neither agree nor reverse presupposition is met



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

b. Felicitous LF



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

– Σ moves to Pol and is interpreted there.

– However, the structure is infelicitous

* presupposition of Pol_{agree} is not met since $[[PolP]]$ is not equivalent to $[[TP]]$ in the antecedent.

* presupposition of Pol_{rev} is not met since $[[PolP]]$ is not equivalent to the negation of $[[TP]]$ in the antecedent.

– Rescue strategy: insertion of covert Σ

– covert Σ_i is inserted, i.e. CN

– covert Σ_i moves to Pol and is interpreted there.

– presupposition of Pol_{rev} is met since $[[PolP]]$ is equivalent 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 in the antecedent, see below

- Another example of a quantificational operator forcing reversal *non* is (42) where negation is interpreted in the scope of the focus-sensitive operator *seul* 'only'. In (42), 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 (41).

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

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

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

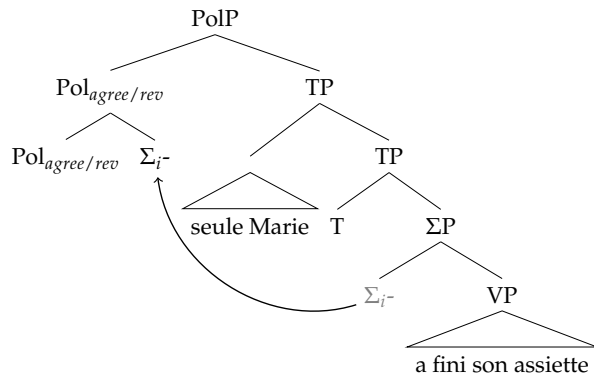
Context: Everybody's gone from the table. All the plates are empty except one.

A: Est-ce que 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:
 $\llbracket \text{TP} \rrbracket = \neg(\text{Marie finished her plate}) \ \& \ \forall x \in \text{ALT}(\text{Marie}): \neg(x \text{ finished } x\text{'s plate}) \rightarrow x = \text{Marie}$

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

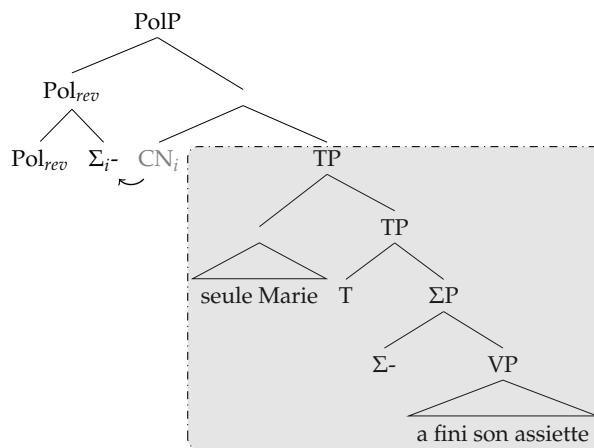
* presupposition of Pol_{agree} is not met since $\llbracket \text{PolP} \rrbracket$ is not equivalent to $\llbracket \text{TP} \rrbracket$ in the antecedent.

* presupposition of Pol_{rev} is not met since $\llbracket \text{PolP} \rrbracket$ is not equivalent to the negation of $\llbracket \text{TP} \rrbracket$ 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 Σ_i is inserted, i.e. CN

– covert Σ_i moves to Pol and is interpreted there.

– presupposition of Pol_{rev} is met since $\llbracket \text{PolP} \rrbracket$ is equivalent 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 require (some) identity between the antecedent and $\text{non}(p)$

4.2.3 Neg-raising

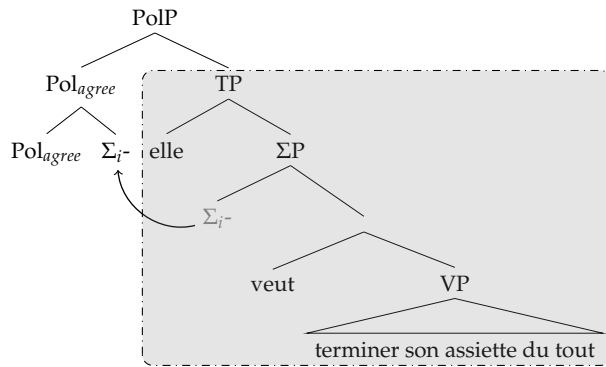
- Let’s start with the neg-raising case repeated in (43). Since I assume the pragmatic analysis of Neg-raising in Bartsch 1973, the logical form of (43) has negation in the matrix clause.

(43) **Negative Q, non answer**

A: Est -ce qu’ [TP elle ne [VP veut pas terminer son assiette du tout]] ? ‘Does she not want to finish her plate at all?’

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

a. LF of A:



$\llbracket \text{PolP} \rrbracket = \forall w' \in \text{BOUL}_{w, \text{Marie}} \neg (\text{Marie finishes her plate in } w')$

- Σ - moves to Pol and is interpreted there
- presupposition of Pol_{agree} is met since $\llbracket \text{PolP} \rrbracket$ is equivalent to $\llbracket \text{TP} \rrbracket$ in the antecedent (after the excluded-middle presupposition has been incorporated)
- 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 VP in the antecedent

4.2.4 Non-quantificational operators outscoping negation

- Recall that the aspectual adverb *toujours* 'still' does not force the reverse reading of *non*. I assume that *toujours* is the spell-out in French of an operator STILL. I assume the semantics in (44/45) following Ladusaw 1978, 1979 and Löbner 1989 as cited in Krifka 2000.

(44) STILL(t, p)

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

(45) not STILL(t, p)

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

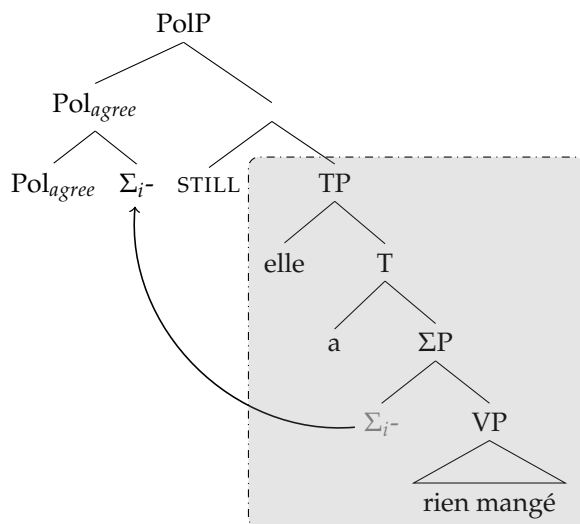
- Because an operator like aspectual *toujours* 'still' does not create a truth-conditional ambiguity: whether it is interpreted below or above negation, the truth-conditions of the sentence it is in do not change (46)

(46) **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 [Σ - [elle a mangé rien]]]]
 $\llbracket \text{TP} \rrbracket = \neg \exists x. \text{she ate } x$
- b. LF of B



- Σ_i - moves to Pol and is interpreted there
- presupposition of Pol_{agree} is met since $\llbracket \text{PolP} \rrbracket$ is equivalent to $\llbracket \text{TP} \rrbracket$ in the antecedent (after the excluded-middle presupposition has been incorporated)
- 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 VP in the antecedent

$\llbracket \text{PolP} \rrbracket = \neg \exists x. \text{she ate } x$

- The TP in the response can be elided since the identity condition on ellipsis is met: TP is E-given with respect to the VP constituent in the question.¹⁷

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 prejacent of a PRP is cancelled unless this would prevent the presupposition of Pol_{agree} or $\text{Pol}_{reverse}$ 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

¹⁷Effectively, this claims that the only reason the operator STILL is present in the response is to satisfy the presupposition of Pol_{agree} . There is evidence that ellipsis by itself does indeed not require the operator to be present in the elided constituent. Thus in (47a), the only possible interpretation possible is one where the elided constituent after *voulu* does not contain *toujours*: as (47b/c) show, the aspectual adverb *toujours* is not compatible with *jamais* 'never'.

- (47) a. Marie veut toujours venir mais Jean n'a jamais voulu venir. 'Marie still wants to come but Jean never wanted to come.'
 b. *Jean n'a jamais voulu toujours venir. 'Int. Jean never still wanted to come.'
 c. Jean n'a jamais voulu venir. 'Jean never wanted to come.'

Appendices

A Negative questions with high negation

- Aside on a different kind of negative questions that I will not consider in this handout
 - There are cases where the negation in a negative question seems to be a case of meta-negation: the question is not asking whether the addressee finds that the shirt is not too small, but whether the addressee finds that the shirt is too small (would you deny that his shirt is a little too small?)

(48) Context: Christian is trying on a shirt. Laurence asks the salesman the following question.

A: Est -ce qu' elle n' est pas (un peu) trop petite sa chemise ?

is it that she NEG is NEG a little too small his shirt

Isn't his shirt a little too small?

B: Il me semble que oui.

it to.me seems that yes

I think it is too small.

- Compare with the following example where the questioned proposition is negative and answering with embedded bare *oui* 'yes' is not possible

(49) Context: Christian is playing the part of a man who became a giant overnight. The costume designer needs to find a shirt and a pair of pants in two sizes: one normal fitting set and one set that appears obviously too small for the actor. Christian is trying out the too-small set. The costume designer is afraid it does not look too small enough.

A: Est -ce qu' elle n' est pas (du tout) trop petite sa chemise ?

is it that she NEG is NEG at all too small his shirt

Isn't his shirt at all too small?

B: ?? Il me semble que oui.

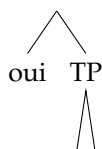
it to.me seems that yes

I think it is too small.

B Do embedded bare response particles involve ellipsis?

- Some accounts analyze response particles as having an elidable full clause as their sister (50) while another analyzes them as being purely anaphoric sentential proforms (51).

(50) Ellipsis analysis



(51) Proform analysis



Under the ellipsis analysis, bare response particles are the result of full TP ellipsis, polarity fragments the result of movement to a position higher than the response particle. Finally polarity-marked full clauses are the spell-out of the sister TP.

B.1 Argument 1: Non-finiteness

- If *oui* is a proform, we expect it to behave like other proforms in French.
- Sentence-level proforms (e.g. *le, en, y*) are not sensitive to whether a predicate embeds finite or non-finite clauses but response particles are.
- No verb, which may only take an infinitival complement (e.g. *s'efforcer* 'strive' in 52, cf B1 and B2), may embed a response particle (B3). However such verbs can occur with a sentence-level proform (B4).

(52) A: Il va finir son assiette ?

he goes finish his plate

He's going to finish his plate?

B1: Il va s'efforcer de terminer.

he goes REFL strive to finish

He's going to strive to finish.

B2: *Il va s'efforcer qu'il termine.

he goes REFL strive that he finishes

B3: *Il va s'efforcer que oui.

he goes REFL strive that yes

B4: Il va s'y efforcer.

he goes REFL to.it strive

He's going to strive to.

- Another example of the effect of finiteness is provided by raising verbs. The verb *paraître* 'seem' can appear in two constructions. In construction 1, the subject does not raise and the complement of the verb is a finite clause. Polarity particles can be embedded in the latter construction as B2 shows.

(53) A: Léa souffre ?

Léa hurts

Is Léa in pain?

B1: Il paraît qu'elle souffre.

it seems that she hurts

It seems that she's in pain.

B2: Il paraît que oui.

it seems that yes

It seems that she's in pain.

- But in construction 2, the subject raises and the complement of the verb can only be non-finite. As B3 and B4 in (54) show, a response particle cannot be embedded there.

(54) A: Léa souffre ?

Léa hurts

Is Léa in pain?

B1: Elle paraît souffrir.

it seems hurt.INF

She seems to be in pain.

B2: *Elle paraît qu'elle souffre.

she seems that she

B3: *Elle paraît oui.

she seems yes

B4: *Elle paraît que oui.

she seems that yes

B.2 Argument 2: Obviation

- There is a phenomenon in French known as obviation which refers to the ban that certain embedding verbs, all assigning subjunctive, impose on an embedded pronominal subject against its being coreferent with the matrix subject.
- For instance (55a) is fine but (55b) is not. The only thing that has changed though is the embedding verb, therefore I will say that *espérer* is obviation whereas *souhaiter* is a +obviation verb.
- The only way to make coreference acceptable with +obviation verbs is for the embedded clause to be non-finite as in (55c)

(55) a. J' espère que je jouerai demain.

I hope that I play.FUT tomorrow

I hope I will play tomorrow.

b. *Je souhaite que je joue demain.

I SOUHAITER that I play.SUBJ tomorrow

Int. I want to play tomorrow.

c. Je souhaite jouer demain.

I SOUHAITER play.INF tomorrow

I want to play tomorrow.

- If embedded bare response particles come with an elided finite clause, we expect them to show the same sensitivity to obviation that full clauses do. On the other hand, if they behave like proforms, we should not see any effect: the sentence-level proform *le* 'it' is not sensitive to obviation (56).

(56) A: Tu vas jouer demain ?

you go play tomorrow

You are going to play tomorrow?

B1: Je le souhaite.

I it SOUHAITE

I want to.

B2: Je l'espère.

I it hope

I hope to.

- Interestingly, obviation effects obtain with response particles when the subject in the antecedent is the same as the matrix subject of the embedding verb (55b). This is expected if PolParts come with a full clause at some level of representation. Interestingly, no such effect occurs when the antecedent is picked up by a proform (55c).

(57) A: Tu vas aller à leur mariage ?

you go go to their wedding

Are you going to their wedding?

B1: *Je souhaite/ aimerais bien que j'y aille.

I SOUHAITER/ would like that I there go.SUBJ

Int. I want/would like to go.

B2: *Je souhaite/ aimerais bien que oui.

B3: Je le souhaite/ aimerais bien.

- Obviation does not occur in two cases: if the subjects do not corefer (58) and if the embedding verb is -obviation (59).
- In both cases, response particles embedding becomes possible which is exactly what is predicted if bare response particles in those examples have an elided full clause.

(58) A: Tom va aller à leur mariage ?

Tom goes go to their wedding

Is Tom going to their wedding?

B1: Je souhaite/ aimerais bien qu'il y aille.

I SOUHAITER/ would like that he there go.SUBJ

I want/ would like him to go.

B2: Je souhaite/ aimerais bien que oui.

B3: Je le souhaite/ aimerais bien.

(59) A: Tu vas aller à leur mariage ?

you go go to their wedding

Are you going to their wedding?

B1: J'espère que j'irai.

I hope that I go.FUT

I hope to go.

B2: J'espère que oui.

B3: Je l'espère.

B.3 Argument 3: Antilogophoricity effect

- If bare response particles involve ellipsis, we expect that if the elided constituent contains an antilogophoric element bound by the subject, the sentence will be unacceptable (60B1).
- This is what we find (60B2).

(60) A: Tu crois que Marie aime cet imbécile_i ?

you think that Marie loves this idiot

Do you think that Marie loves this idiot?

B1: *Il_i pense qu' elle aime cet imbécile_i. C' est évident.

he thinks that she loves this idiot it is obvious

B2: *Il_i pense que oui. C' est évident.

he thinks that yes it is obvious

B3: Il_i le pense. C' est évident.

he it thinks it is obvious

He thinks so, it's obvious.

B4: Je pense que oui. C' est évident.

I think that yes it is obvious

I think that Marie does, it's obvious.

References

- Bartsch, R. (1973). "Negative transportation" gibt es nicht. *Linguistische Berichte* 27(7), 1–7.
- Brasoveanu, A., D. Farkas, and F. Roelofsen (2013). N-words and sentential negation: evidence from polarity particles and VP ellipsis. *Semantics and Pragmatics* 6.
- 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.
- 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. (2011). On the syntax of yes and no in English. Newcastle University.
- 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.
- 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.
- Laka, I. (1990). *Negation in Syntax: On the Nature of Functional Categories and Projections*. Ph. D. thesis, MIT, Cambridge, Mass.
- Löbner, S. (1989). German schon - erst - noch: an integrated analysis. *Linguistics and Philosophy* 12, 167–212.
- Merchant, J. (2001). *The Syntax of Silence: Sluicing, 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.
- Thoms, G. (2012). Yes and no, merge and move, ellipsis and parallelism. Handout presented at workshop 'On the syntax of yes and no workshop', Newcastle University.
- Zeijlstra, H. (2008). Negative concord is syntactic agreement. Ms., University of Amsterdam.