

Negative Inversion in Standard English

English Syntax I

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Trabajo Fin de Grado.

Curso 4º (2017/2018)

Grado en Estudios Ingleses.

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Vitoria-Gasteiz
Mayo 2018

ABSTRACT

This paper focuses on the description of several controversial properties of Negative Inversion (NI) in Standard English. The first topic is the fact that, according to some scholars, subject-auxiliary (subj-aux) inversion when there is preposed negative element is sometimes optional. Scholars agree that subject-auxiliary inversion is compulsory whenever the fronted negative element is an adjunct, but they differ when taking complements into account. Some state that subject-auxiliary (subj-aux) inversion is optional when the fronted negative element is a complement. However, others consider subject-auxiliary inversion to be compulsory all the time. In this paper I show that it is true that subject-auxiliary inversion is optional when the fronted negative element is a complement, as all the speakers asked accept non-inversion, and only half of them accept inversion in such environment. The next topic is whether NI behaves as a Root Phenomenon (RT) or not. Some scholars have stated that NI is in fact a RT, however, by analysing and comparing the environments where RTs and NI can appear, I get to the conclusion that, unlike Topicalization or Focalization (which are also considered RTs), NI does not follow all the requirements to be considered a RT. The last topic is the classification of *Only* Inversion as a subtype of NI, which I believe not to be accurate, as there are many differences between both phenomena, as the optionality of inversion and their monotonicity. I have approached all these topics from an empirical point of view, comparing what has been previously said in the literature with native English speakers' grammaticality judgements gathered by an online survey, with the aim of getting clearer results.

Keywords: Negative Inversion, Negative Preposing, Negative Constituent Preposing, Negative Adverbials, Interrogative Inversion, Subject-auxiliary inversion, *Wh*- questions, Focus Preposing, Topicalization, *Only* Inversion, *Only* Preposing, *Only* fronting, Root Phenomena.

Acknowledgments

This dissertation would not have been possible without the help and wisdom of my supervisor, Vidal Valmala Elguea. I want to thank him for being patient with me, for dedicating so much time to me, and for offering me such good advice. I would also want to thank Dr. Bryan John Leferman and my good friend Ian Jones for supplying me with their native knowledge, not only for this dissertation, but throughout the whole degree. In addition, I want to thank Juana Martín Jimenez and Haizea Ustaran González for their unconditional support, motivation and for proofreading. And, finally, I want to thank everyone who filled in the research poll I conducted, in particular I want to thank Husni Hassan Yoonus Zawahir, Emma Bumstead Vujčić, Richard Wood Mendibil and Nadina Castro Gavira for sharing it and finding new participants.

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List of abbreviations

EPP.....	Extended Projection Principle
FP.....	Focus Preposing
NI.....	Negative Inversion
NP.....	Noun Phrases
NR.....	Non-Restrictive clauses
OI.....	Only Inversion
RT.....	Root Transformation phenomenon
Subj-aux	Subject-auxiliary
Top.....	Topicalization

1. Introduction.

Negative Inversion¹ (NI) is a non-canonical syntax phenomenon in which a negative constituent appears in a non-canonical position in the left periphery of the sentence triggering subject-auxiliary inversion (1,4). It can affect both adjuncts (2) and arguments (3).

- (1) a. Never have I ever been abroad. (Google)
b. Under no condition would I leave this town.
c. John swore that under no circumstances would he accept their offer. (Authier, 1992, p. 331)
d. Where did Mary say that never again would she go? (Radford, 2009, p. 333)
e. Only then did he realize that he had made a terrible mistake. (Francis, 2017, p. 214)
- (2) a. *On no account* could she move to Paris. (De Clercq, 2010, p. 1)
b. *Not until December* can we go to see grandma. (adjuncts)
- (3) a. *None of those* would he want to eat. (Büring, 2004, p. 1)
b. *Not a sound* could we hear. (complements) (Google)

A prominent property of NI is that, like in root yes/no questions (5) and *wh*-questions (6), it, in most cases, obligatorily triggers subject auxiliary inversion (4.b-c), which is not the case in other non-canonical syntax phenomena like Topicalization (Top) (7) or Focus Preposing (FP) (8).

- (4) a. I have never seen such a big lion.
b. Never have I seen such a big lion.
c. *Never I have seen such a big lion.
- (5) a. Will Bill go to the movies? (yes/no question)
b. *Bill will go to the movies?
- (6) a. When will you go? (*wh*-question)
b. *When you will go?
- (7) a. Muffins, I will eat tomorrow. (Topicalization)
b. *Muffins, will I eat tomorrow.
- (8) a. MACADAMIA NUTS I will eat. (Focus Preposing)
b. *MACADAMIA NUTS will I eat.

¹ Also known as Negative Constituent Preposing, Negative Preposing, NEG-shift or Negatively conditioned subject operator inversion.

Another property that NI (9) and *wh*-questions (10) have in common is that they, unlike Topicalization (11), do not tolerate an intonational phrase break (or comma intonation, indicated by ,) between the fronted constituent and the rest of the sentence (Haegeman, 2000; Büring, 2004).

- (9) a. Nowhere does he mention my book.
 b. *Nowhere, does he mention my book. (NI)
- (10) a. When will you go? (*wh*-question)
 b. *When, will you go?
- (11) Somewhere, he mentions my book. (Topicalization) (Büring, 2004, p.3)

It is important to make a distinction between NI and Topicalized negative constituents (12). NI (12.a) has scope over the whole sentence, which is thus negative. So that it can be paraphrased by *Mary would not be happy even if she had the best job*. While Top (12.b) has scope over the constituent it accompanies, and can be paraphrased by *Mary would be happy if she did not have a job* (Haegeman, 2000).

- (12) a. With no job would Mary be happy. (NI)
 b. With no job, Mary would be happy. (Top)

Unmistakable evidence that NI sentences are negative and Topicalization of negative elements are positive comes from some tests (13-15), which are: *neither/so*-tag-test (13), adding *I don't think* to the sentence (14) and tag questions (15) (Haegeman, 2000). If a sentence is negative, it should be able to appear featuring *neither, I don't think* and the tag question *would*, which is the case with all the *a* sentences below, which are NI. The opposite happens when the sentence is positive, then, we can see that all the *b* sentences, which are Top, are positive because they are ungrammatical whenever we add *neither, I don't think* or *would*.

- (13) a. With no job would Mary be happy, and neither/*so would Jane.
 b. With no job, Mary would be happy, and *neither/so would Jane.
- (14) a. With no job would Mary be happy, I don't think.
 b. With no job, Mary would be happy, *I don't think.
- (15) a. With no job would Mary be happy, would/*wouldn't she?
 b. With no job, Mary would be happy, *would/wouldn't she?

Another significant difference between NI and Top is that NI is focal in nature, while Top is topical, i.e. NI introduces new information, thus being able to appear as an answer to a *yes-no* question (16) (Maekawa, 2007).

- (16) a. Did you see anyone?
b. No, not a single person did I see. (Culicover, 2013, p. 247)

This paper will only cover NI, therefore it will not focus on Topicalized negative constituents.

Next, I will consider another characteristic of NI, which is a topic of some discussion in the literature, which is whether NI is a bounded or unbounded operation.

Some scholars (Collins and Postal (2014), Radford (2009), Sobin (2003)) believe NI to be a bounded operation, i.e. NI can only move to the left periphery of the clause where it is base-generated (17). In (17.a) and (17.b) we can see a parallelism, in both sentences the preposed negative constituent *never again* moves to the left periphery of the clause where it has been base-generated. In (17.a) *never again* is giving information about the constituent *eat clams*, thus meaning *Mary will eat clams never again*; while in (17.b) *never again* accompanies the verb *say*, thus meaning *I never again said that*. On the other hand, (17.c) is not grammatical because *not a penny* is modifying the verb *bring* (*Mary remembered to bring not a penny*) which appears in the clause where the negative constituent has been generated; however, *not a penny* appears outside such clause, in the matrix clause.

- (17) a. I said [that never again_i will Mary eat clams t_i].
b. [Never again_i did I say t_i] that Mary will eat clams.
c.*Not a penny_i did Bill say [that Mary remembered to bring t_i] (Adapted from Sobin, 2003, p. 184-185)

However, this is not the behaviour one would expect because, typically, most preposed elements which move to the left periphery of a sentence in phenomena such as Top, FP, or *wh*-questions are unbounded and can move long distance, i.e. are able to move to a left peripheral position inside the clause they have been base-generated in (18.a), or to a left peripheral position outside such clause, in the matrix clause (18.b).

- (18) a. I asked [what_i Bill said t_i]
b. What_i did Bill say [that Mary remembered to bring t_i]? (Adapted from Sobin, 2003, p. 185)

Furthermore, if we take into account that NI is focal in nature, as we have seen in (16), one would expect it to also be an unbounded operation like FP but, as it is exemplified in (17.c), this does not seem to be the case. Nevertheless, it looks like NI unbounded extraction is acceptable for some native English speakers as well (19) (Maekawa, 2007). In (19) the preposed negative constituent *never again* refers to the constituent *eat clams* (*she will eat clams never again*), not to the main verb in the matrix clause *think*, which, as we saw in (17.c) normally is not grammatical.

(19) Never again_i do I think [that she will eat clams *t_i*]. (Adapted from Maekawa, 2007, p. 194)

Further research would be needed as to explain why certain long-distance movements of NI are ungrammatical (17.c) and why others are accepted by some (19), and in what contexts can each appear.

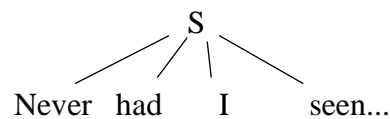
In what follows I will consider the syntactic analyses of NI and three of the most controversial issues about the nature of NI, as the optionality of subject-auxiliary inversion in certain cases, whether NI is a Root phenomenon or not, and whether *Only* inversion is an instance of NI or a different syntactic phenomenon. The aim of this paper is to see how speakers behave with respect to these three empirical issues.

The paper is structured as follows: Section 2 will be devoted to the different analyses of NI that have been proposed in the literature, which will be portrayed in linear order from the first hypotheses to later hypotheses featuring a more complex structure of the left periphery, taking into account different approaches, as movement and non-movement. In section 3 I introduce a debate regarding the three controversial properties of NI mentioned before. Section 4 will be dedicated to the survey I conducted and the results obtained. At the end of the paper I will provide a conclusion and a reference list.

2. Approaches to the analysis of NI.

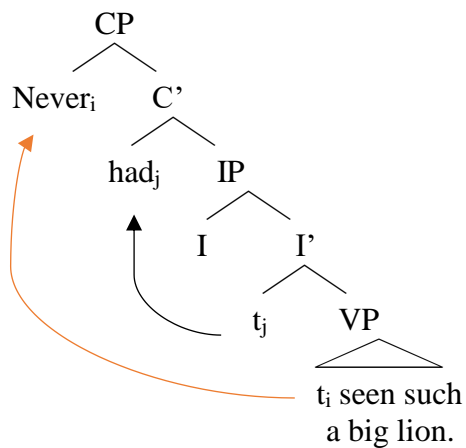
Many attempts at analysing Negative Inversion sentences syntactically have been carried out by syntacticians. The first ever hypothesis for the analysis of a Negative Inverted sentence was in 1964, by Emonds. Notice that this hypothesis assumes non-binary branching (20), as binary branching and the notion of hierarchy were not developed yet. The negative element and the auxiliary are moved from the position where they were base-generated to the position immediately dominated by the highest S at the left periphery of the sentence. I will not consider this analysis in more detail.

(20)



Hooper and Thomson (1973) and Radford (1988, cited in Pool, 2004) give a new analysis of NI (21.b), stating that negative elements move from their base-generated position inside the VP to a higher position in the spec of CP, triggering the movement of the auxiliary verb from I to C, as represented in the following tree (21.b):

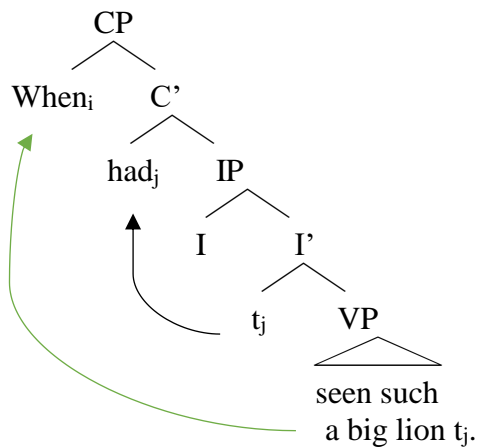
(21) a. Never had I seen such a big lion.
b.



Notice that that analysis in (21.b) is the same as the one provided for *wh*- questions (22.b).

(22) a. When had you seen such a big lion?

(22) b.

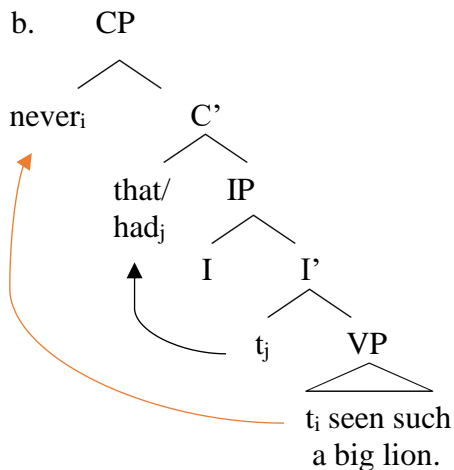


The equivalence of both analyses is supported by the fact that, as Haegeman (2000) claims, NI and *wh*- questions cannot co-occur in root clauses (23).

- (23) a. *On no account where should I go?
 b. *Where on no account should I go? (Haegeman, 2000, p. 27)

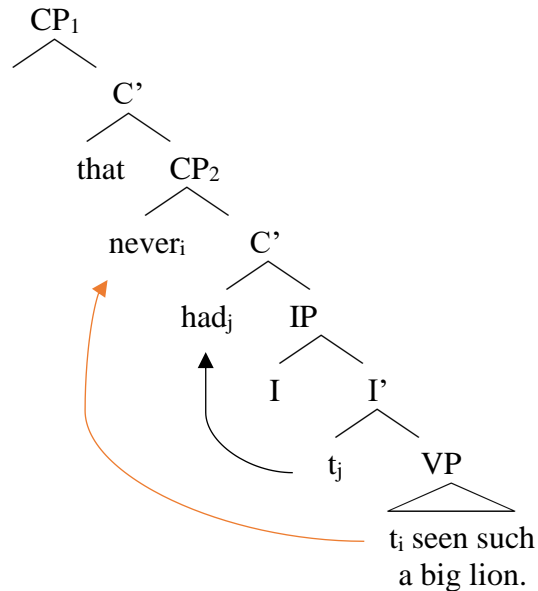
Many scholars had noticed that the analysis in (21.b) which is equal to that of *wh*- questions (22.b) is problematic considering that NI is possible in embedded sentences following the complementizer *that*, as shown in (24). If *never* moves to the spec of CP, we would have a sentence such as *Bill said never that/had I seen such a big lion*. Furthermore, the complementizer *that* and the auxiliary *had* would compete for the same position (the head of CP): *had* could not be able to move to the head of CP, as it has been previously occupied by *that* (24.b). As a result, the sentence would be ungrammatical, but, as we see in (24.a) the sentence is in fact grammatical. Then, we can conclude that this analysis cannot account for this fact.

(24) a. Bill said [that never had I seen such a big lion]



As a solution, Authier (1992) provided an analysis featuring two CP projections. Now the complementizer *that* appears in the highest head of CP₁, the negative preposed element *never* appears in the spec of CP₂, and the auxiliary *had* appears in the head of CP₂:

(25)



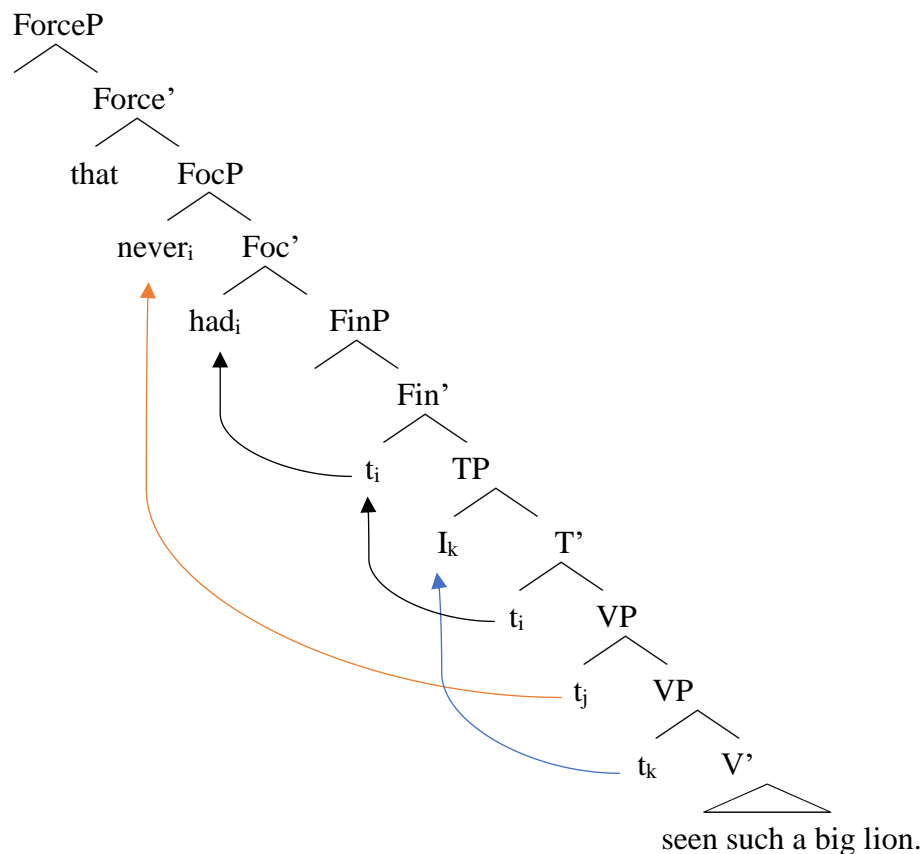
However, some authors as Haegeman (2000)², later incorporated Rizzi (1997)'s structure of the left periphery to the analysis of NI sentences (26.b).

As we can see in (26.b) this new analysis consists on a more complex structure of the left periphery, that is, instead of an iterated CP projection as Authier (1992) provided, the such CP is divided in ForceP, FocP, FinP and TP (Haegeman, 2000). In Spec of FocP we find the negative preposed element *never*; in the head of FocP, the auxiliary *had*; and in Spec of TP, the subject *I*. Each of these elements have moved from their base-generated positions.

(26) a. Bill said [that never had I seen such a big lion]

² For similar analyses see Haegeman and Guerón (1999), Cormack and Smith (2000), Collins and Postal (2014), De Clercq (2010) and Branigan (2011).

(26) b.



Sobin (2003) realises that the aforementioned hypotheses do not account for some data on NI. For the hypothesis given in (21.b) he argues that the analyses of NI and *wh*-questions cannot be the same, as, if they were, one would expect both phenomena to be acquired at the same time, but this is not the case, as he claims that *wh*-questions are acquired earlier in life than NI. Furthermore, he suggests that these two phenomena (NI and *wh*-questions) are produced by different processes, as subj-aux inversion is not possible in embedded *wh*-questions (27) but is possible in embedded NI sentences (28).

- (27) a. I asked [what *Mary saw*]
 b. *I asked [what *did Mary see*] (Adapted from Sobin, 2003, p. 185)

- (28) a. *Bill said [that never *I had seen* such a big lion]
 b. Bill said [that never *had I seen* such a big lion]

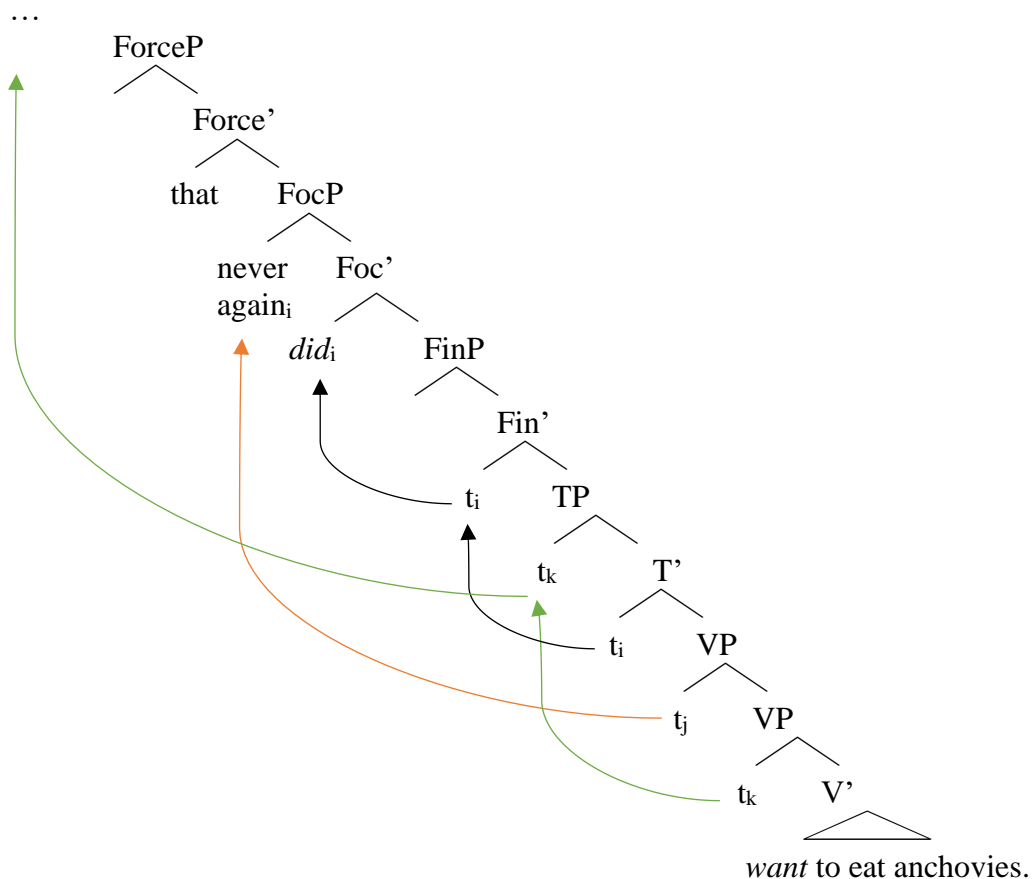
On the other hand, for the hypothesis in (26.b) Sobin (2003) states that there are some problems too. He claims that an analysis such as (26.b) cannot predict the ungrammaticality of sentences like (29.c), i.e. following the hypothesis in (26.b) the three

sentences in (29) should be grammatical, but, as it turns out, one of them (29.c) is not acceptable.

- (29) a. I promise that on no account during the holidays *will I write* a paper.
 b. Never again over Christmas *will I eat* that much turkey.
 c. *Never again *will over Christmas I eat* that much turkey. (Adapted from Sobin, 2003, p. 187-198)

Furthermore, still considering the analysis in (26.b), Sobin (2003) realised that if the subj-aux inversion happened in the clause where the preposed negative element moves, one would expect to find do-support in that same place in sentences such as (30.a), but this is not the case, as we can see in (30.b-c).

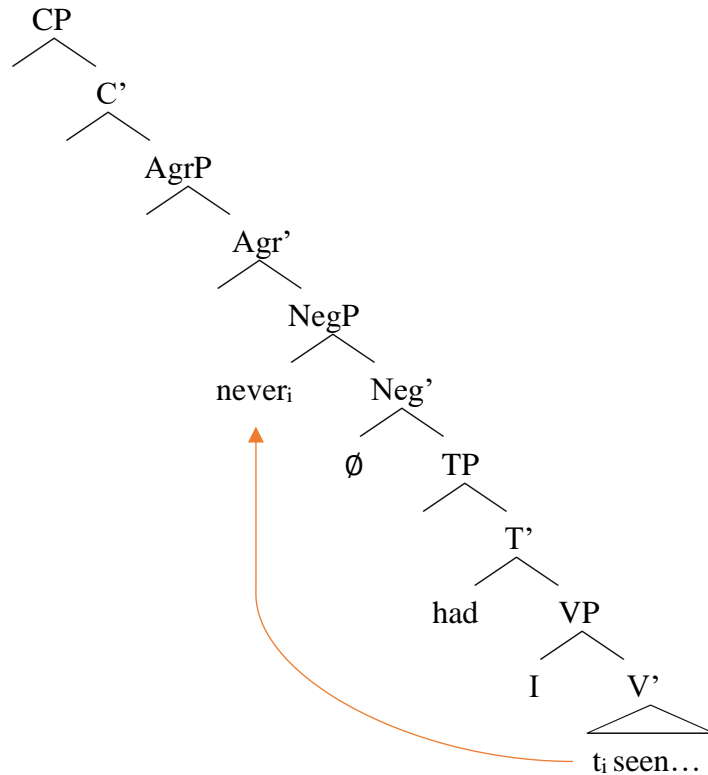
- (30) a. Who_i did you say that never again *t_i wanted* to eat anchovies?
 b. *Who_i did you say that never again *t_i did want* to eat anchovies? (Adapted from Sobin, 2003, p. 199)
 c.



To account for these problems, Sobin (2003) provides an alternative to (26.b) which does not require such a complex structure of the left periphery: the “non-movement” analysis. He claims that in NI the negative preposed element undergoes

movement to spec of NegP and both the auxiliary and the subject do not move from their base-generated position (31).

- (31) a. Never had I seen such a big lion
 b.



However, Maekawa (2007) states that there is a problem with Sobin (2003)'s approach, as it violates the Extended Projection Principle (EPP) which states that, in English, the spec of TP must always be filled, and in (31) it is empty.

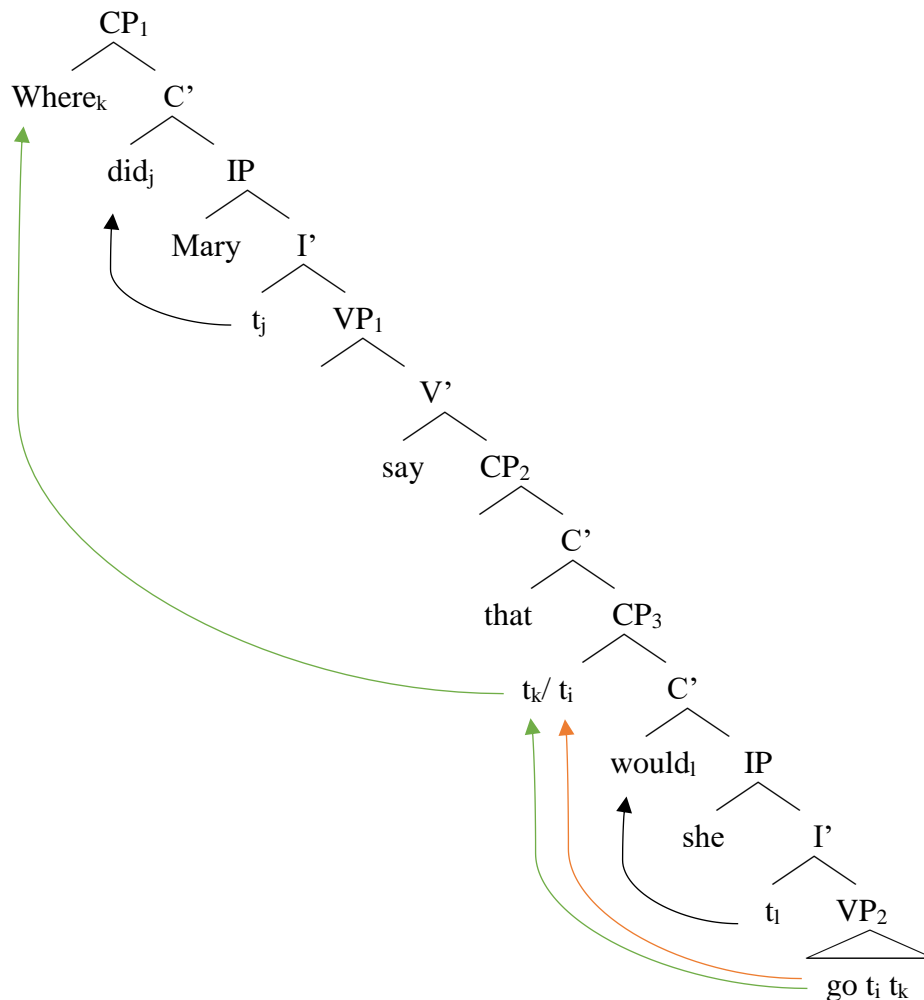
In this section I have previously said that, at least in root clauses, NI and *wh*-questions cannot co-occur (23), supporting the analyses in (21.b) and (22.b), nonetheless, Radford (2009) demonstrates that NI and *wh*- questions are compatible when the movement of the *wh*- word is long distance while the movement of the preposed negative constituent occurs inside the clause where it has been base-generated (32).

- (32) *Where* did Mary say that *never again* would she go? (Adapted from Radford, 2009, p. 333)

Bearing this in mind, with an analysis such as the one given by Authier (1992) in (25), for instance, a sentence such as (32) could not be grammatical, because the negative preposed element *never* moves to a position where the DP *where* has left a trace (t_k) in spec of CP_3 when moving from its base-generated position inside VP_2 to the spec of CP_1 , blocking the movement of *never* to spec of CP_3 , where, according to the analysis in (25), the negative preposed element should appear (33.b).

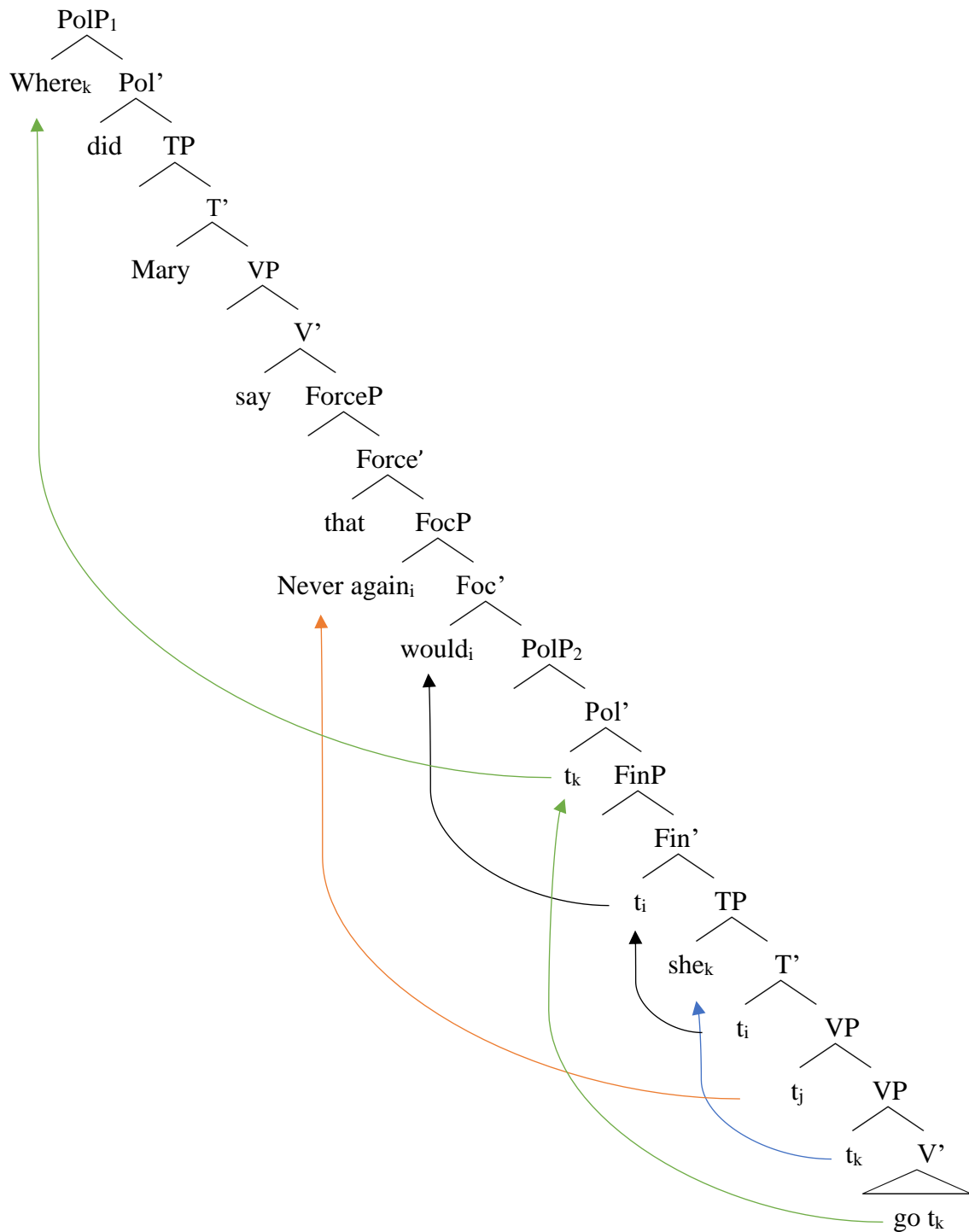
(33) a. [*Where* did Mary say [that *never* again would she go?]] (Adapted from Radford, 2009, p. 333)

b.



The analysis in Haegeman (2000) can be used to solve the problem of *wh*-questions and NI co-occurring in this context, as we can see in (34.b) in this analysis the DP *where* and the preposed negative element *never* do not compete for the same place. *Where* moves from its base-generated position in the right periphery of the sentence to the highest spec of PolP, leaving a trace in PolP₂, whereas *never* moves from its base-generated position to Spec of FocP.

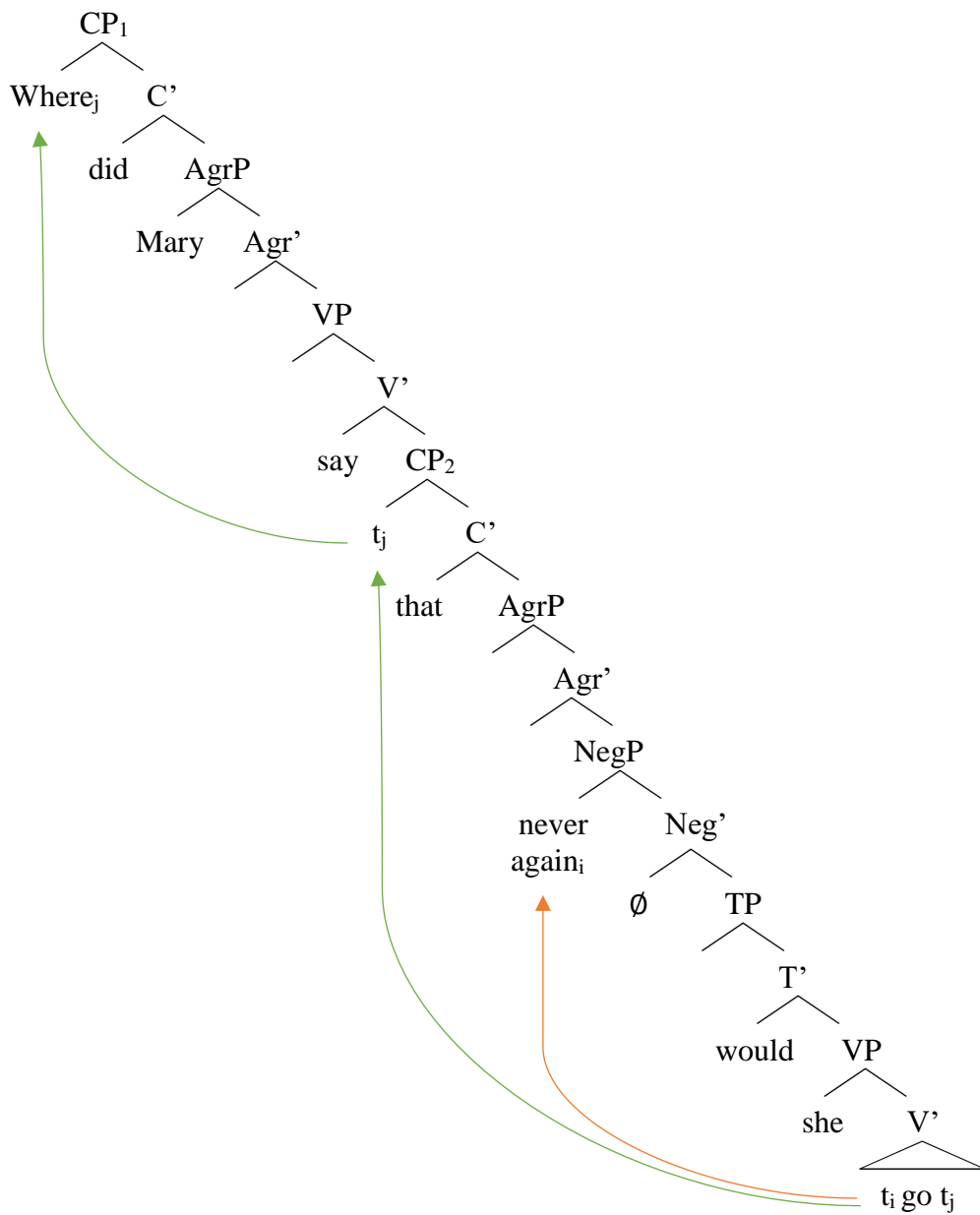
- (34). a. [*Where* did Mary say [that *never again* would she go?]]
 b.



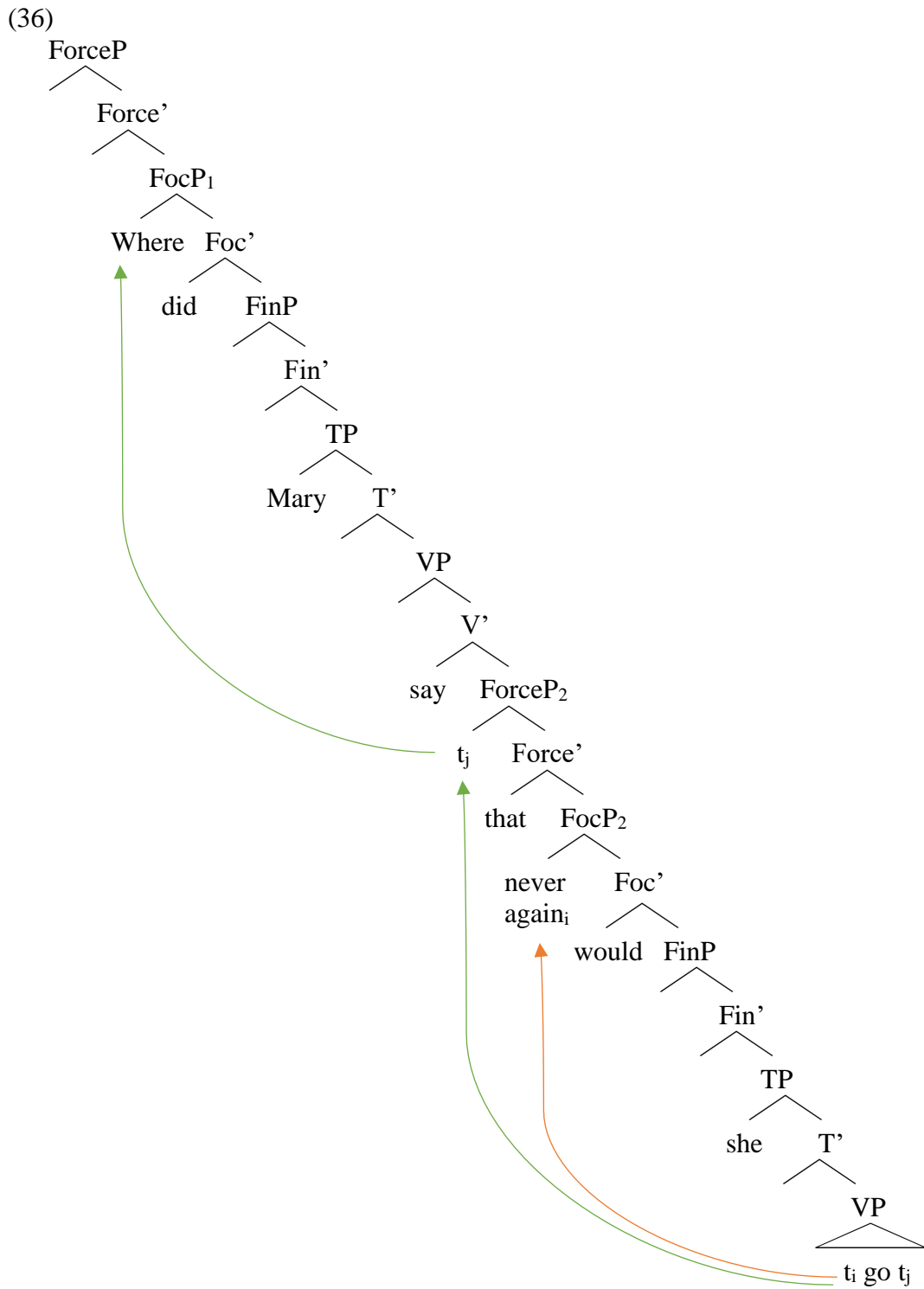
Sobin (2003)'s analysis can also account for this fact, as in his analysis (35) the preposed *wh*- word *where* and the preposed negative constituent *never again* move to different positions within the tree, not clashing at any moment: *where* moves from its

base-generated position, through the spec of CP₂, to the spec of CP₁, whereas *never again* moves from its base generated position to the spec of NegP.

(35)



Radford (2009), on the other hand, states that the *wh*- word *where* moves from its base-generated position, passing through the spec of ForceP₂, to the spec of FocP₁, whereas the preposed negative element *never again* moves from its base-generated position to the spec of FocP₂ (36).



As we can see, there does not seem to be a perfect analysis, and this must be due to the fact that some aspects of the description of NI are still controversial. In order to give an appropriate hypothesis of the analysis of NI one should take all these controversies into account. In the next section, then, I will consider them.

3. Most debated issues within NI.

3.1. Optionality of inversion

Notice that in the intro I said that NI in most cases requires subj-aux inversion (4) -repeated below-. Although its description is not homogeneous.

- (4) a. I have never seen such a big lion.
b. Never have I seen such a big lion.
c. *Never I have seen such a big lion.

As we can see in (37), when the negative constituent Not until the next morning, which is an adjunct, is preposed, the sentence without inversion is ungrammatical (37.a), while the inverted counterpart is grammatical (37.b). Whereas, as we can see in (38), when the negative constituent None of them, which is a complement, is preposed, both sentences (38.a) without inversion and (38.b) with inversion are grammatical.

- (37) a. *Not until the next morning *she realised* how serious it was
b. Not until the next morning *did she realise* how serious it was. (Adapted from Buring 2004, p. 3)
- (38) a. None of them *he found* useful.
b. None of them *did he find* useful. (Adapted from Buring 2004, p.1)

Haegeman (2000) claims that inversion is always compulsory, considering the grammaticality of negative preposed elements without inversion as an elliptic form in informal speech. Sentence (39.a) appears without inversion because it is the elliptic form of (39.b) (p.26, footnote 5).

- (39) a. Nothing *I have seen* that could rival the pyramids.
b. [There is] nothing *I have seen* that could rival the pyramids. (Adapted from Haegeman, 2000, p. 26, footnote 5)

Cormark and Smith (2000), however, consider both (40.a), with inversion, and (40.b), without inversion, equally grammatical sentences.

- (40) a. Nothing *did I eat* for breakfast.
b. Nothing *I ate* for breakfast. (Cormark & Smith, 2000, p. 402)

They give an explanation for this fact, as they claim that there are two fronting mechanisms: Φ on and Gap structures. Φ on is the semantic head which morphologically selects for the PF-interpretable part of some sign (i.e. word class, number, gender...), and

Gap is a Case assigner. For them, the inverted structure (40.a) is derived by the use of Gap, and the non-inverted structure (40.b), by Φ on.

Some scholars such as Büring (2004) state that inversion is optional in some cases. His explanation is that negative preposed elements which are adjuncts obligatorily trigger subject-auxiliary inversion (37), whereas inversion with negative preposed complements is optional (38) even though examples of NI with complements (38.b) are rare.

To conclude which is the best explanation, it would be interesting to see how native English speakers who are not familiar with this issue behave in this respect. In section 4 I will give the results obtained from carrying out a survey on this topic.

3.2. NI as a Root Phenomenon

Emonds (1964) proposes that there are two main classes of transformations: structure preserving transformations and root transformations (RT). Structure preserving transformations are operations in which certain constituents move to positions in which they might have been generated. An example of a structure preserving transformation is Passivation (41.a), in which a DP object is moved to spec of IP, a position where DPs can be generated (41.b)

- (41) a. Peter_i was killed *t_i*.
b. Mary killed Peter.

On the other hand, RTs or Non-Structure preserving transformations are operations in which certain constituents move to positions in which they could not be generated. An example of a RT is Topicalization (Top) (42.a), in which a DP is moved to the left periphery of the clause, a position where it would not be generated (42.b).

- (42) a. Bill_i, I don't know *t_i*.
b. That boy_i, I don't like *t_i*.

Structure preserving transformations are possible in root clauses (41.a), i.e. a main clause which is not embedded; embedded root clauses (42.a), i.e. subordinate clauses which behave as root clauses, for example in embedded clauses as the complement of *that* clauses introduced by verbs of saying (Class A) as *say, report, exclaim...*, verbs

which describe mental processes (Class B) as *suppose, believe, think...* and by semi-factive verbs, i.e. verbs which describe the way in which the speaker knows something to be true (Class E) *realize, learn, find out...*; and embedded non-root clauses, (42.b) i.e. subordinate clauses which do not behave as root clauses, for instance in complement position of *that* clauses introduced by verbs which do not assert propositions (Class C) as *doubt, deny...* nor with verbs which describe feelings (Class D) as *resent, regret, bother...* Whereas RTs are restricted to root clauses (43.a) and a subset of root-like subordinate clauses, but cannot appear in embedded non-root clauses (43.b) as Hooper and Thomson (1973) argue (p. 474-481).

- (42) a. I think [that Peter_i was killed *t_i*] (Embedded root clause)
 b. [If Peter_i is killed *t_i*] we will have to go away. (Embedded non-root clause)
- (43) a. I think [that Bill_i, she doesn't know *t_i*] (Embedded root clause)
 b. *[If Bill_i she doesn't know *t_i*] I won't invite him. (Embedded non-root clause)

Following this distinction, then, both Emonds (1964) and Hooper and Thomson (1973) consider NI to be a Root Transformation phenomenon because it behaves as phenomena like Top.

- (44) a. Not a single book did he buy. (Root clause)
- (45) b. I exclaimed that never in my life had I seen such a crowd. (Embedded root clause, Class A verb) (Hooper & Thomson, 1973, p. 474)
 c. I believed that never would our promise be broken. (Embedded root clause, Class B verb) (Google)
 d. I found out that never before had he had to borrow money. (Embedded root clause, Class E verb)
- (46) d. *It's likely that seldom did he drive that car. (Embedded root clause Class C verb)
 e. *He was surprised that never in my life had I seen a hippopotamus. (Embedded root clause, Class D verb)
 c. *The proof that at none of the beaches are the lifeguards alert is that there have been many fatalities. (Embedded non-root clause) (Emonds, 1964, p. 15).

More evidence for considering NI a RT comes from the fact that NI is possible in non-restrictive relative clauses (NR) (47.a) which are known to behave as root clauses, but are not possible in restrictive relative clauses, as they do not behave as root clauses (47.b).

- (47) a. This car, [which only rarely did I drive], is in excellent condition. (NR)
 b. *The car that only rarely did I drive is in excellent condition. (Restrictive
 Relative Clause) (Adapted from Hooper & Thompson, 1973, p. 489)

Also, NI cannot appear within noun phrases (NPs) which have as their head a noun of saying (48.a), nor in reduced clauses i.e. as complement of a clause with an uninflected verb (48.b), neither in idioms as *stop at nothing* (49) and *think nothing* (50). It cannot appear in expressions which impose indefinite interpretations on DPs (51), nor in predicative expressions (52) (Hooper & Thomson, 1973).

- (48) a. *Your notion that never before have the children had so much fun is absurd.
 b. *The director wanted [on no account to accept that solution]. (Infinitive clause)
- (49) a. *Nothing will Carla stop at to get that job
 b. Carla will stop at nothing to get that job.
- (50) a. Vernon thinks nothing of drinking nine beers.
 b. *Nothing does Vernon think of drinking nine beers.
- (51) a. There is no (is not any) gorilla in that SUV.
 b. *No gorilla is there in that SUV.
- (52) a. Boris will be no Einstein/will not be any Einstein.
 b. *No Einstein will Boris be. (Hooper & Thomson, 1973, p. 485-286)

Emonds (1964) considers sentences featuring NI within preposed *if* clauses, which behave as embedded non-root clauses, to be ungrammatical (53), as we saw in (43.b), it was also the case in Top sentences.

- (53) *If under no conditions may they leave the area, how can they pay their debt.
 (Emonds, 1964, p. 15)

However, this does not seem to be the case, as we will see in section 4.2. many speakers accept sentence (53) as grammatical. We will need, then, more research, as NI, in this respect, does not behave exactly like other RTs, as VP Preposing, Top, Adverb Dislocation, Right Dislocation, etc...

3.3. *Only* Inversion

As we have seen in the intro, *Only* inversion³ is considered, for some authors, an instance of NI, and, as a result has not been analysed in isolation (1.e).

(1.e) *Only* then did he realize that he had made a terrible mistake. (Francis, 2017, p. 214)

Jacobsson (2007), amongst other authors as Haegeman (2000), for instance, considers *Only* inversion as preposed negative element in NI. However, if *Only* Inversion was an occurrence of NI, we would expect them to behave alike. Nevertheless, there are some differences between them.

The first difference is that, unlike NI, *Only* is not monotone decreasing (54), a requirement to be treated as NI (Collins & Postal, 2014). Because (54.a) does not entail (54.b), i.e. saying that *Only Nancy eats vegetables* (54.a), *Only Nancy eats spinach* (54.b) does not have to be the case. In contrast with (55), where *On no account should you eat a piece of fruit for breakfast* (55.a) entails *On no account should you eat an apple for breakfast* (55.b).

- (54) a. *Only Nancy eats vegetables.*
b. *Only Nancy eats spinach.* (Collins & Postal, 2014, p. 134)
- (55) a. *On no account should you eat a piece of fruit for breakfast.*
b. *On no account should you eat an apple for breakfast.* (Haegeman, 2000, p.32)

Another difference between *Only* inversion and NI is that in NI, inversion is obligatory in most cases (4) -repeated below-, whereas in *Only* inversion, as it can be deduced by Collins and Postal (2014)'s claim that "all speakers allow Negative Inversion with *only* phrases" (p. 134), non-inversion is also acceptable (56).

- (4) a. I have never seen such a big lion.
b. Never have I seen such a big lion.
c. *Never I have seen such a big lion.
- (56) a. *Only on Fridays do I go out with my cousin*
b. *Only on Fridays I go out with my cousin*

³ Also known as *only* preposing, or *only* fronting.

In section 4.3. I will give evidence for the optionality of inversion in *Only* preposed sentences. Although it is true that both inverted and non-inverted sentences are grammatical, most speakers do not accept both as grammatical, i.e. some speakers seem to like the inverted sentence more than the non-inverted counterpart, and vice versa.

4. Experiment and results.

Previously I have considered a series of issues which are topic of debate when describing the Negative Inversion phenomenon. As we have seen above, for most issues there is not a consolidated agreement amongst authors, which means that there are no consistent results in the literature about the grammaticality judgements of some of these issues.

I decided, then, to conduct my own experiment to verify the claims made by some authors. For this, I created an online survey in Google Forms and added the sentences which I wanted confirmation to verify their grammaticality. I divided the poll into 5 sections: section 1 was a control question, section 2 contained negative preposed elements which were both adjuncts and complements, as to account for the optionality of inversion in NI, section 3 featured *if* clauses, *because* clauses and complex NPs, and the last section was about optionality of inversion in *Only* Inversion sentences.

84 people filled the survey. Amongst those 84, only 14 (17%) were selected to trust their grammaticality judgements on NI sentences in the rest of the sections with the exception of the last section (*Only* inversion). I only took into account those speakers who were well behaved taking into account what we know in the literature, i.e. people who accepted both (57.a) and (57.b) as equally grammatical sentences and rejected (57.c) at the same time, which meant they were productive users of NI (the 17% mentioned). This is because, as the survey was online, more control was needed, as there were variables which could not be accounted for.

- (57) a. I would never eat spinach.
b. Never would I eat spinach.
c. *Never I would eat spinach.

4.1. Optionality of inversion.

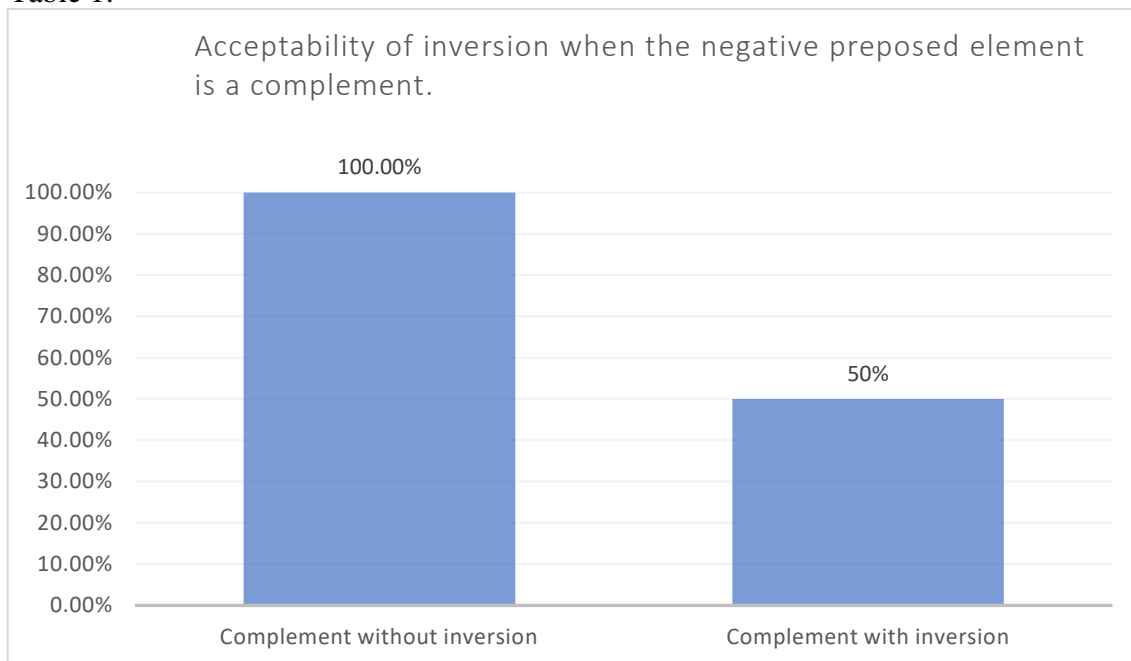
As I have previously stated above in section 3.1., there is not an agreement on what the role of inversion is in preposing of negative elements. Haegeman (2000) states that inversion is always compulsory, and instances of non-inversion are cases of ellipsis; Cormark and Smith (2000) consider inversion and non-inversion to be equally acceptable; and Buring (2004) claims that NI can occur with both adjuncts and complements, although inversion with complements is rare, so, as a result, the non-inverted counterpart is more used in this case.

To check which of these is the more accurate approach, I decided to provide six sentences (58) in the survey: four sentences featuring subject-auxiliary inversion (58 a-d) and two sentences without inversion (58 e-f). Out of the first four sentences, the first two (58 a-b) are examples of preposed negative adjuncts and the last four (58 c-f) are preposed negative complements, with (58 c-d) and without inversion (58 e-f).

- (58) a. On no account *could she move* to Paris (adjunct) (De Clercq, 2010, p. 1)
b. Not until December *can we go* to see grandma. (adjunct)
- c. Not a sound *could we hear* (complement) (Google)
d. None of those *would he want* to eat (complement) (Buring, 2004, p.1)
- e. Nothing *I have seen* that could rival the pyramids. (complement no inversion) (Haegeman 2000, p. 26 footnote 5)
f. None of them *he found* useful (complement no inversion) (Buring, 2004, p. 1)

In table 1 we can see how preposed negative complements without inversion (58 e-f) is accepted by all the informants, whereas preposed negative complements with inversion were accepted by only 50% of them.

Table 1.



Then, table 1 shows Haegeman (2000)'s claim would not be appropriate, as not every non-inverted sentence can be explained by ellipsis, and neither would Cormark and Smith (2000)'s, because we can see that the inverted and the non-inverted counterpart are not equally acceptable. However, this table corroborates Buring (2004)'s claim that instances of subject-auxiliary inversion with preposed negative complements are rare, as 100% of the participants accepted the non-inverted sentences (58 e-f), whereas only 50% found negative preposed complements with inversion (58 c-d) grammatical.

Further research would be needed as to explain why and how this variation between preposed negative complements with and without inversion occurs.

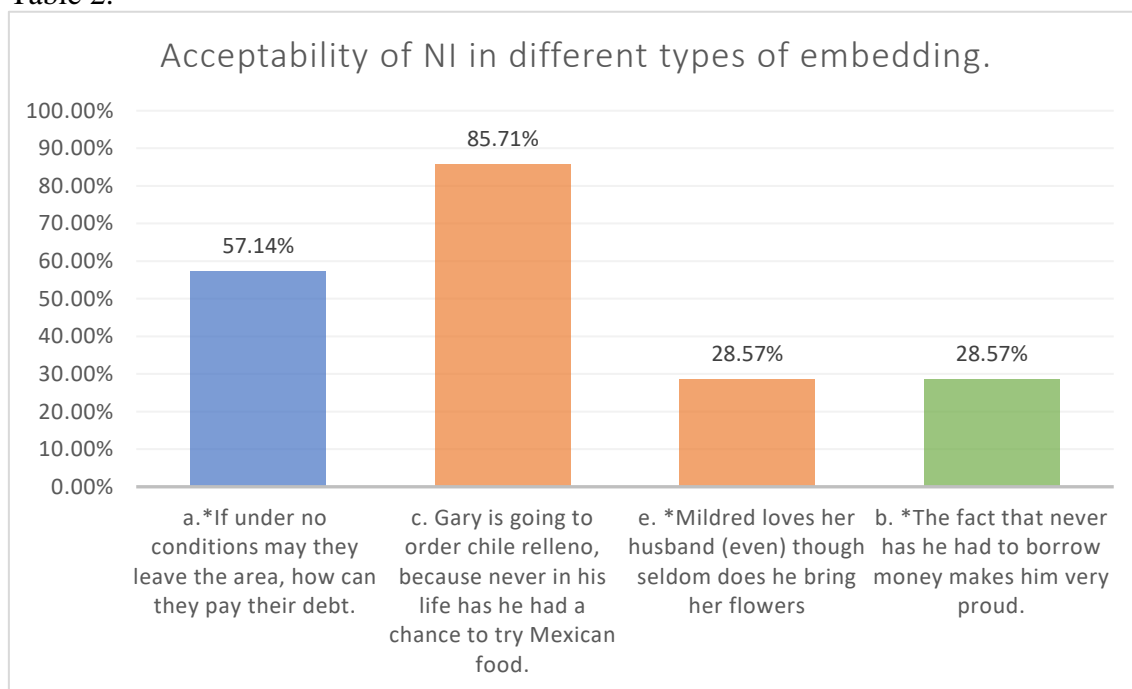
4.2. NI as a Root Phenomenon.

As it has been discussed before, Emonds (1964) and Hooper and Thomson (1973) consider NI a Root Phenomenon. However, I wanted to check four contexts to see if such claim was accurate or not. For this, I have divided this section into three subsections, marked by colours in Table 2: in blue, sentence (59.a) deals with *if* sentences; in green, sentence (59.b) deals with complex NPs; and in orange sentences (59.c) and (59.e) deal with two different *because* sentences.

The sentences used were⁴:

- (59) a. *If under no conditions may they leave the area, how can they pay their debt. (Emonds, 1964, p. 15)
 b. *The fact that never has he had to borrow money makes him very proud. (Authier, 1992, p. 332)
 c. Gary is going to order chile relleno, because never in his life has he had a chance to try Mexican food. (Hooper and Thompson 1973, 493)
 d. *Mildred loves her husband (even) though seldom does he bring her flowers. (Hooper and Thompson 1973, 494)

Table 2.



Let us first consider sentence (59.b) which features NI in complex NPs. I have stated before that NI, as the rest of RTs, can appear as complements of embedded clauses introduced by Class A verbs as *say*, *report*, *exclaim*... but cannot appear within noun phrases (NPs) which have as their head a noun of saying. This is corroborated by the results in Table 2, as only 28.5% chose sentence (59.b) which features a complex NP which have as a head a verb of saying *the fact that*.

- (59.b). *[The fact that never has he had to borrow money] makes him very proud. (Authier, 1992, p. 332)

⁴ Sentences which appear with an ungrammaticality mark (*) are the ones which have been considered as ungrammatical in the literature.

From this fact we can conclude that, in general terms, this claim is correct, and NI does behave as other RTs in this respect. In what follows, I will consider the other two issues; *because* and *if* clauses.

In section 3.2. I stated that NI, as RTs, can appear in non-restrictive (NR) clauses, but cannot appear in restrictive clauses, as the former behave like root clauses but the latter does not. In this subsection I will consider an exception: we can see that NI can appear in both non-restrictive (60.a) and restrictive *because* clauses (60.b).

- (60) a. Under no circumstances will Herbert be at this party, because I talked to his mother this morning. (NR *because* clause)
- b. Never in his life had Sam gone out for dinner because his wife was cooking Japanese food. (Restrictive *because* clause)

Hooper and Thomson (1973) point out that restrictive *because* clauses featuring NI only apply if they are presupposed (59 c-e) -repeated below-.

- (59) c. *Mildred loves her husband (even) though seldom does he bring her flowers. (Hooper and Thompson 1973, 494) (Not presupposed)
- e. Gary is going to order chile relleno, because never in his life has he had a chance to try Mexican food. (Hooper and Thompson 1973, 493) (Presupposed)

Table 2 gives evidence for this fact, as 85.7% of the participants chose (59.c) as grammatical, whereas only 28.5% of them liked (59.e). Then, we can see that NI does not strictly behave as other RTs, as it actually can appear in presupposed restrictive *because* clauses. In the next subsection, when considering *if* clauses, we will find more evidences of NI not behaving precisely like other RTs as Topicalization, for instance.

As we have been seeing, NI is supposed to behave like other RTs, and, for the most part, it does. However, presupposed restrictive *because* clauses and preposed *if* clauses featuring NI are problematic for this assumption. At the end of section 3.2. I argued that NI sentences are expected to behave as Topicalization in *if* sentences, i.e. they should be ungrammatical, as Emonds (1964) proposes.

However, I have found a counterexample (59.a) -repeated below- to this statement of Emond's, as the results of the questionnaire I have conducted shown in Table 2. contradict this assumption: 57.15% of the informants, more than half of them, accepted the *if* sentence as grammatical.

(59.a) If under no conditions may they leave the area, how can they pay their debt.
 (Emonds, 1964, p. 15)

We can see, then, that NI does not follow all the requirements which are necessary for it to be considered a RT following the conditions provided by Emonds (1964) and Hooper and Thomson (1973), as it violates the requisite that it should not be able to appear in any embedded clause which does not behave as a root clause. Therefore, more research would be needed in order to give a full explanation for this fact.

4.3. Optionality of inversion in *Only* Inversion.

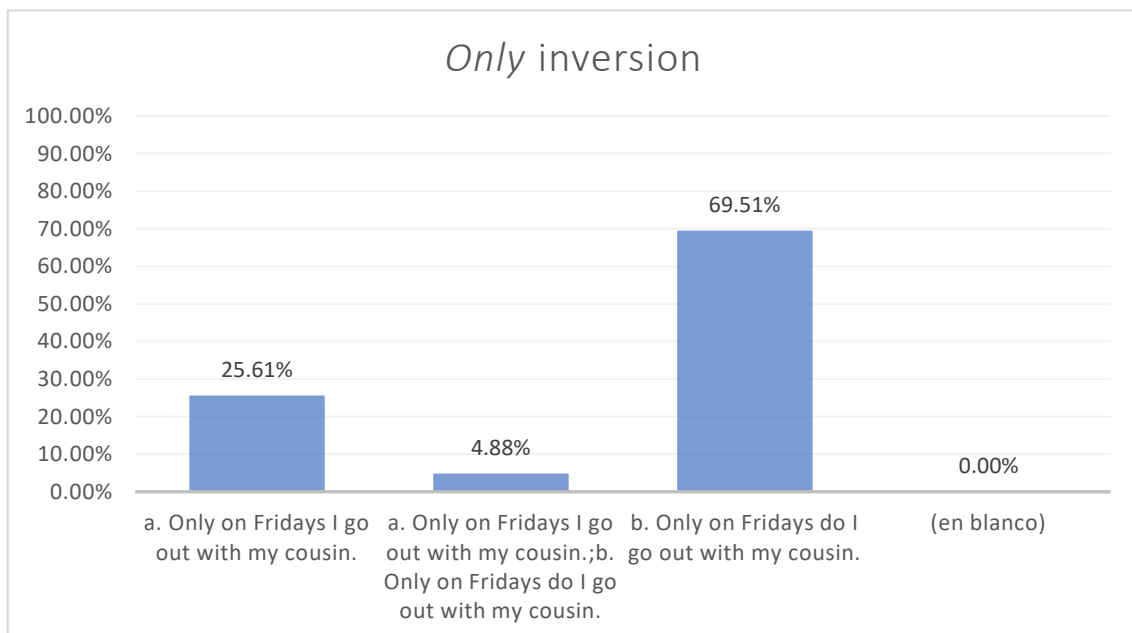
As I have mentioned before, unlike in NI sentences, subject-aux inversion in preposed *Only* sentences is believed to be optional (56) -repeated below-.

- (56) a. Only on Fridays *do I go* out with my cousin
 b. Only on Fridays *I go* out with my cousin

To check if this is the case, I added the sentences in (56) to the survey to see how native speakers behaved in this respect.

In Table 3 we can see that most people preferred the inverted sentence, as 69% of the participants chose the subject-auxiliary inverted sentence when *Only* appeared preposed (56.a), whereas only 25.61% of them chose the non-inverted counterpart (56.b). In this respect, we can assume that most people treat *Only* inversion as NI.

Table 3.



However, in descriptive English grammar books and webpages as Phil William's *English Lessons Brighton* (2018), *BBC Learning English*, *Business English* webpage, etc... the inverted order (56.a) is still preferred and advised, whereas the non-inverted sentence with a preposed *Only* (56.b) is not even mentioned.

It is also interesting to see that most speakers who chose (56.a) believed (56.b) to be wrong, and vice versa, and only 2.4% of the participants chose both (56.a) and (56.b) to be equally grammatical. These data show that there is cross-speaker variation (there are two options speakers choose from, some choose one, others choose the other) but not intra-speaker variation (each person chooses only one option, not both), which is not the case in NI either.

Then, with these results, one cannot conclude *Only* inversion and NI are the same phenomenon, as we saw in (4) -repeated below-, NI needs subject-auxiliary inversion (4.b), and a sentence without inversion is ungrammatical (4.c):

- (4)
- a. I have never seen such a big lion.
 - b. Never have I seen such a big lion.
 - c. *Never I have seen such a big lion.

Further research is needed in this area as to be able to compare and distinguish between *Only* Inversion and NI, even though, at first glance they look very much similar.

Conclusion

In this paper I have analysed NI sentences, explaining their main, most important, characteristic which is that they trigger subject-auxiliary inversion in most cases. I have shown how NI is a unique phenomenon which cannot be compared to any other (*wh*-inversion, Top, FP or even *Only* inversion). I have shed light upon the different ways NI has been analysed, exposing the problems which arise with each proposal. I have given evidence for the fact that in Negative Preposing, inversion can be optional sometimes. I have also explained the distribution of this phenomenon within the sentence, i.e. in what environments we can and cannot use NI, concluding that NI should not be considered a RT. Furthermore, I have argued that *Only* inversion should not be analysed as an instance of NI. Further research is still needed as to be able to give an explanation of NI within Universal Grammar, as to give a general explanation of NI in all languages and not only its case in English, as some authors as Jiménez-Fernández (2017) have stated the difficulty to apply the English analysis of NI to other languages as Spanish.

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