

The Semantics and Syntax of the Italian
Focus Particles *Solo* and *Soltanto**

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Contents

1	Introduction	4
I	Semantics	5
2	Introduction: Semantics of Exclusive Focus Particles	6
2.1	Association with focus	6
2.2	Scales	7
2.3	Prejacent and Universal	9
2.4	Sufficiency Modals	11
3	Experiment: Semantics	12
3.1	Participants	12
3.2	Materials and Design	12
4	Results: Semantics	15
4.1	Scales with partial-order vs. pre-order	15
4.2	Exhaustivity	16
4.3	Prejacent and Universal	17
4.3.1	Simple Cancellation	17
4.3.2	Visibility to Negation	18
4.3.3	Projection out of If-Clauses	19
4.4	Sufficiency Modals	19
5	Discussion: Semantics	20
II	Syntax	23
6	Introduction: Syntax of <i>Solo</i> and <i>Soltanto</i>	24
6.1	Non-Contiguous Association with Focus	28
6.2	NPIs	29
6.3	Intervention Effects	31
7	Experiment: Syntax	32
7.1	Participants	32
7.2	Materials and Design	33
8	Results: Syntax	35
8.1	Non-Contiguous Association with Focus	35
8.2	NPI-Licensing	37
8.2.1	Association with Focus in Islands	37
8.2.2	NPI-Licensing	38
8.2.3	NPI-Licensing in Islands	39
8.3	Intervention Effects	40
9	Discussion: Syntax	41
9.1	Non-Contiguous Association with Focus	41
9.2	NPI-Licensing	44
9.2.1	Islands	44
9.2.2	NPI-Licensing	45

9.3 Intervention Effects	46
10 Conclusion	47

1 Introduction

The study of information structure (IS) is the study of the modulation of information in context. IS is encoded on several levels, from intonation to word order; from specific structural positions to affixes on words (Roberts 1996). Given certain contexts, sentences will be more or less FELICITOUS—that is, more or less appropriate in terms of the structuring of information in the prior context. To illustrate this, compare the answers in response to the question in (1-a), in which capital letters (informally) represent prosodic prominence.

- (1) a. Who is Samantha talking to?
b. Samantha is talking to MARCUS.
c. #SAMANTHA is talking to Marcus.

The question in (1-a) anticipates a set of potential answers regarding *the people Samantha is talking to*. In this example, placing emphasis on *Marcus* (1-b) is felicitous as a response to the preceding question, whereas placing emphasis on *Samantha* (1-c) is not, as indicated by the hash symbol #.¹ In this way, emphasis (or prosodic prominence) can be said to encode specific information regarding information structure, i.e., here the preceding question and the set of potential answers.

Answering questions plays a significant role in how Roberts (1996) formalizes speakers’ discourse strategies in establishing ‘the way things are.’ Updating the common ground—that information which is shared amongst interlocutors—is one goal of discourse, achieved through inquiries and their sub-inquiries. The question in (1-a) is a sub-inquiry of a super-inquiry, e.g., ‘What is Samantha doing,’ which is itself a sub-inquiry of another super-inquiry ‘What is there to know about Samantha?’, which is itself a sub-inquiry of the ultimate question ‘What is the way things are?’ Fully answering the ‘current question’ (CQ) (also called the ‘question under discussion,’ which may be either explicit—for example, in (1-a)—or implicit in the context of discourse) is part of the strategy of updating the common ground.

In the model proposed by Beaver and Clark (2008), certain focus sensitive expressions—for example, exclusive focus particles (hereafter EFPs) such as *only* in English, *nur* in German, and *solo* and *soltanto* in Italian—lexically encode reference to the CQ: they establish that the focused element is the maximal or unique entity satisfying the properties of the proposition without the focus, thus excluding any alternatives (Renans et al. 2011, Beaver and Clark 2008). As an illustrative example, consider the examples in (2). Here, *only* associates with the element that has the most prosodic prominence, called the focus; furthermore, as will be seen, changes in prosody will change the meaning of the sentence—which is why these operators are called focus sensitive (Beaver and Clark 2008).

- (2) a. Bob Dylan has **only** written good FOLK music.
b. Bob Dylan has **only** WRITTEN good folk music.

The word carrying prominence is represented by capital letters (i.e., FOLK and WRITTEN in the respective sentences). Shifting the prominence from the word “folk” to “written” changes the interpretation: In (2-a), with the pitch accent on “folk,” the CQ is concerned with the styles of good music Bob Dylan has written, and the most salient interpretation is that among the possible types of music (e.g., folk, rock, blues), all except folk are excluded in the styles of music Bob Dylan has written well.² In contrast, in (2-b), the CQ may be concerned with what Bob Dylan has done with good folk music, and the most salient interpretation is that he has written it, as opposed to sing it, play it, etc.

¹Certain symbols will be used consistently to represent felicity/acceptability judgments throughout this thesis. The absence of a symbol means the sentence is acceptable. The asterisk * will mark a sentence which is syntactically ill-formed. The hash symbol # will mark a sentence which is semantically/pragmatically infelicitous, i.e., although the sentence is syntactically well-formed, it does not make semantic or pragmatic sense; in some cases, this may simply be that it does not have the intended meaning, as indicated by the translation. The question mark ? will mark a sentence which is questionable as to either syntactic or semantic/pragmatic well-formedness. Any other symbols—such as, for example, when citing another author’s judgments—will be defined when not following this schema.

²Note that the example sentences do not reflect in any way the opinion of the author with regard to Bob Dylan and his diverse musical career.

This thesis is concerned with such words, specifically the semantics and syntax of the Italian focus particles *solo* and *soltanto* ‘only.’ These focus particles are of particular interest since *solo* and *soltanto* are semantically similar, but they are syntactically distinct, as shown in the following:

- (3) a. Tommaso ha **solo** fumato.
 b. Tommaso ha **soltanto** fumato.
 c. #Tommaso ha fumato **solo**.
 d. Tommaso ha fumato **soltanto**.
 INTENDED: *Tommaso only smoked*.

Here, all except (3-c) have the intended meaning that the unique property that is true of T. is that he smoked.³ As can be seen, *solo* may precede the element it associates with, whereas *soltanto* can either precede or proceed the element in focus, establishing three conditions I refer to as PRE-SOLO (3-a), PRE-SOLTANTO (3-b), and POST-SOLTANTO (3-d), respectively.

There is a great deal of literature on the semantics and syntax of exclusive focus particles; see, for example, König (1991), Rooth (1992), Roberts (1996), Büring and Hartmann (2001), Beaver and Clark (2008), among many others. However, although the literature has a lot to say about the pre-position of focus particles—that is, when the focus particle is in a position preceding the element carrying the most prosodic prominence—there is surprisingly little literature on the post-position of focus particles, a position which exists for English and perhaps German—although, as Büring and Hartmann (2001) write, examples in German are regarded as “rare, sporadic and limited.”⁴

Thus, the goal of this thesis is two-fold: 1) the semantic component, in which I seek to investigate whether all three conditions elicit identical semantic effects to establish whether they are in fact semantic synonyms or not; and 2) the syntactic component, in which the syntax of the three conditions is explored, with the ultimate goal of providing a syntactic analysis for the divergent syntax of the Italian focus particles *solo* and *soltanto*.

The thesis will proceed as follows:

- Part I is concerned with the semantics of *solo* and *soltanto*. This part will be divided into four sections: In Section 2, an overview of the semantics of exclusive focus particles will be presented. This will establish the theoretical background for Section 3, in which the experiment for the semantics of the three conditions will be introduced. Section 4 will present the results of the experiment, which will conclude with a discussion in Section 5.
- Part II is concerned with the syntax of the EFPs. This part will again be divided into four sections: Section 6 will introduce three hypotheses for a syntactic analysis of *solo* and *soltanto*. Section 7 will introduce the experiment that was conducted as part of the research in this section. Section 8 will present the results, and Section 9 will discuss the results.

Section 10 will conclude by bringing together the findings in Part I and Part II.

³However, it is worth noting that in (3-c) there is another interpretation which is possible, i.e., that T. is alone (that is, without company) while smoking. In this and other post-position examples, *solo* is used adjectivally, as in (i):

- (i) Simona é venuta sola.
S. came alone (i.e., she was unaccompanied).

In this case, the meaning of *solo* is different from the focus particle *solo* in that it does not exclude a set of alternatives, but rather has the meaning ‘alone.’ Syntactically, *solo* in a post-position may behave differently too: for example, the adjective may have gender and number agreement with a noun, whereas when used as an exclusive focus particle it never does. This adjectival use of *solo* will not be considered in this thesis.

⁴It is certainly worth noting that several native speakers regarded the use of *soltanto* to be of a higher register and overall less frequent than its counterpart *solo*, with post-position *soltanto* being the least frequent of the three conditions. Nonetheless, despite questions of register and frequency, in every situation in which the pre-position was possible, it appeared that the post-position was also a viable alternative; cf. Büring and Hartmann (2001) for post-nominal *nur*, ‘only,’ which they reject as “unnatural,” and thus disregard in their analysis; similarly, as a native speaker I would say that the use of post-position *only* in English is much more limited than the pre-nominal position.

Part I

Semantics

2 Introduction: Semantics of Exclusive Focus Particles

In this introduction, several aspects of the semantics of exclusive focus particles (EFPs) will be introduced. Most of the formal aspects of focus semantics will be based on Beaver and Clark (2008)'s *Sense and Sensitivity: How Focus Determines Meaning*, although the presentation here is not intent on either rigorously promoting or fiercely disputing this or any other particular semantic theory (such as, for example, Rooth (1992) or Roberts (1996), which—as I understand it—provide much of the foundation for Beaver and Clark (2008)); rather, the goal is to establish the general semantics of EFPs in English that will form the basis for an analysis of the Italian EFPs *solo* and *soltanto*. To this end, I will draw much from both Beaver and Clark (2008)'s QFC model and the guidelines from the *Questionnaire on Focus Semantics* (Renans et al. 2011), as well as some from Rooth (1992) and Roberts (1996), among others, when appropriate. In particular, this introduction will seek to answer the following questions:

- i) What is meant by association with focus? What is focus projection? (Subsection 2.1)
- ii) What are the differences in the scales exclusives may refer to? (Subsection 2.2)
- iii) What are the ‘positive’ and ‘negative’ parts of exclusives? What characteristics do the so-called ‘prejacent’ and ‘universal’ have? (Subsection 2.3)
- iv) What is a sufficiency modal reading, and what does that have to do with EFPs? (Subsection 2.4)

Again, the discussion in Section 2 will provide the basis for the questionnaire to test the semantic similarity of *solo* and *soltanto*; the methods and design of this questionnaire will be discussed in Section 3. The results will be presented in Section 4, which will be followed by a discussion in Section 5. Following the section on the semantics of *solo* and *soltanto*, the syntax of these EFPs will be explored in Part II.

2.1 Association with focus

Prosodic Prominence As mentioned in the introduction, association with focus is typically linked with prosodic prominence: changes in prosody will change the meaning of the sentence. This change in meaning predicts that, in some contexts, certain focus placement will not be permitted. Consider the following example:

- (4) a. Bob dylan has written good rock music.
- b. I disagree. Bob Dylan has only written good FOLK music.
- c. #I disagree. Bob Dylan has only WRITten good folk music.

In the above example, (4-b) is a felicitous response—that is, prosodic prominence is in the appropriate place—to the statement in (4-a). The oddness of sentence (4-c) in this context is marked with the hash symbol #; here, this indicates that the sentence is carrying an inappropriate prosodic phrasing given the above context. But why is (4-c) infelicitous?

EFPs such as *only* function in making the element in focus (i.e., the prosodically-prominent word) the only true alternative, whereas all other potential alternatives are regarded false. Recall that in (4-b), with the pitch accent on “folk,” the most salient interpretation is that among the possible types of music (e.g., folk, rock, blues), all except folk are excluded when talking about the styles of music Bob Dylan has written well—this is the intended contrast in the context of *Bob dylan has written good rock music*, making this sentence felicitous in context. In contrast, in (4-c) the most salient interpretation is that what Bob Dylan has done with good folk music is write it, as opposed to play it, sing it, etc.

This is clearly not what is intended in the phrase of disagreement in (4-c), and thus this prosodic prominence is infelicitous.

Standard notation for the marking of focus at a syntactic level is done by subscripting an uppercase “F” to the focused constituent. Using this notation, the sentences in (2) would be written in the following way:

- (5) a. Bob Dylan has only written good [folk]_F music.
 b. Bob Dylan has only [written]_F good folk music.

An element carrying prosodic prominence, however, can have various levels of focus-marking (or F-marking). To illustrate this, consider the following sentences, adapted from Beaver and Clark (2008), all with prosodic prominence on *Dylan*:

- (6) a. Greil Marcus wrote a book about [Dylan]_F.
 (*Who did Greil Marcus write a book about?*)
 b. Greil Marcus wrote a book [about Dylan]_F.
 (*What kind of book did Greil Marcus write?*)
 c. Greil Marcus wrote [a book about Dylan]_F.
 (*What did Greil Marcus write?*)
 d. Greil Marcus [wrote a book about Dylan]_F.
 (*What did Greil Marcus do?*)

The extension of focus from an element carrying the pitch accent onto a larger constituent is called focus projection. As illustrated above, the pitch accent is on *Dylan*, but the focus projection can be on *Dylan* (6-a), on the prepositional phrase (6-b), on the noun phrase (including the prepositional phrase) (6-c), on the verb phrase (6-d), etc. In each example the prosodic prominence is on the deepest element (*Dylan*) and the focus is projected up.

2.2 Scales

Exclusives differ in the scales to which they can refer. The three types of scales exclusives may refer to are summarized like so:

- (a) logically entailing scales with partial-order, e.g., partially-ordered sets;
 (b) logically entailing scales with total order, e.g., sentences with numerals;
 (c) non-entailing scales with contextually-given pre-ordering, e.g., ranks or professions.

As Beaver and Clark (2008) state: a scale is “a salient partial ordering of propositions from weaker to stronger.” A *logically entailing scale with a partially-ordered set* (scale a) is represented in the Hasse diagram in Figure 1, in which the example set {a, b, c} and its power set are shown, ordered by inclusion. The set is partially-ordered since some pairs in the set are incomparable, i.e., no line connects them, representing the fact that they are not subsets of each other, for example, {a,b} and {b, c} (cf. total order).

Now consider sentence (7), from *QUIS_{SEM}* (Renans et al. 2011):

- (7) a. Which books did George read for the German literature exam?
 b. George only read [The Magic Mountain and Faust]_F.

If in Figure (1) the set {a, b, c} is the set of German literature necessary for the exam, such as, for example, {*Magic Mountain*, *Faust*, *Three Penny Opera*}, then a stronger answer on the scale to the example set {*The Magic Mountain*, *Faust*} is the proper superset {*Magic Mountain*, *Faust*, *Three Penny Opera*}. The weaker answer is any singleton set, such as {*Magic Mountain*} or {*Faust*}. Whereas the sentence *George read The Magic Mountain and Faust* answers the question in (7-a),

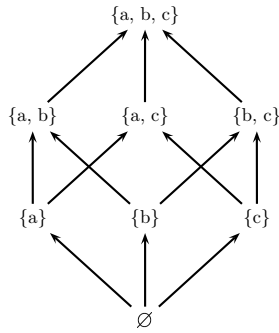


Figure 1: Partially-Ordered Scale

including the focus particle *only* comments on the CQ, namely that the set $\{The\ Magic\ Mountain, Faust\}$ completely satisfies the CQ to the exclusion of any other German literature.

On the other hand, an *entailment scale with a total order* (scale b) is shown in Figure (7). If a set $\{a, b, c\}$ is a total-order scale (or linear order scale), then every element is comparable to every other element in the scale. In this scale, all elements are arranged on a single chain, and all elements are comparable in the chain (i.e., all elements are connected). An example of such a scale is the set of natural numbers $N = \{0, 1, 2, 3, \dots\}$.



Figure 2: Total-Ordered Scale

Now consider sentence (8), adopted from $QUIS_{SEM}$:

- (8) a. How many fish did Mike catch?
 b. Mike caught only $[THREE]_F$ fish.

The stronger answer on the scale is again any proper superset (e.g., $\{4\}$), whereas the weaker answer is any singleton set, such as $\{2\}$ or $\{1\}$. Furthermore, the answer “three fish” entails that the weaker answers “1” and “2” are also true.

In contrast, a *non-entailing scale with a pre-ordered set* (scale c), as the name states, does not function on an entailment scale. As an example, consider the following set of musicians $\{Bob\ Dylan, Donovan, David\ Hughes\}$.⁵ Now consider the CQ in (9), adopted from Beaver and Clark (2008):

⁵It goes without saying that Bob Dylan is a seminal figure in the folk revival in the 1960s; Donovan was a contemporary to Bob Dylan, although he was often regarded as a lesser Dylan; David Hughes is a guitar, banjo, and fiddle player who happens to be a friend of mine—despite the fact the he is a lesser-known musician, in no way would I want to suggest in these examples that he is a lesser artist.

- (9) a. (*Mariah is a reporter for a music magazine that was doing interviews with various musicians*)
 Who did Mariah end up getting an interview with?
 b. Mariah only got an interview with [Donovan]_F.

The stronger answer on the pre-ordered scale would be a set containing a more worthwhile interviewee, such as Bob Dylan; a weaker answer is the set containing a musician not as well-known as Donovan, e.g., David Hughes. The answer in (9-b) anticipates that the speaker expected Mariah to get a more significant interview than what she ultimately got.

In this example, it is possible that two distinct propositions in answer to CQ have equal weight; that is, ‘*Mariah got an interview with Bob Dylan*’ and ‘*Mariah got an interview with Bob Dylan and David Hughes*’ are equally strong; in contrast, in a partially-ordered scale the latter would be the stronger answer, and the former the weaker. Furthermore, ‘*Mariah only got an interview with Donovan*’ may not say anything about whether she also got an interview with a lesser-known musician; in fact, it is most likely of no significance to the interlocutor, as the expectation is that Mariah would get something better (Beaver and Clark 2008).

The two scales under investigation here will be scales with partial-ordering (a), and scales with pre-ordering (c). Scale (b), i.e., total order, was not investigated since in preliminary research⁶ the use of *solo* and *soltanto* in both pre- and post-position was regarded as uncontroversial when used with this scale.⁷ And so, for the sake of limiting the scope of my research, I chose to restrict myself to the scales (a) and (c) to see what differences between them, if any, emerged.

2.3 Prejacent and Universal

A sentence with an EFP like *only* has two primary meaning components: one positive, called the prejacent; and one negative, called the universal (also sometimes referred to as the exclusive). The prejacent of the sentence *Only Dylan plays folk music* is the statement *Dylan plays folk music*. The universal, on the other hand, is the negative component, i.e., *nobody other than Dylan plays folk music*.

The following three tests will be conducted in order to explore whether the prejacent and universal are i) conversational implicatures, ii) assertions, or iii) presuppositions.

- Simple Cancellation: conversational implicatures can be cancelled, whereas presuppositions and assertions cannot.
- Visibility to Negation: assertions are visible to negation, whereas presuppositions are not.
- Projection out of if-clauses: presuppositions project out of if-clauses, whereas assertions do not.

Conversational Implicatures Conversational implicatures may be cancelled with simple negation, whereas presuppositions and assertions cannot. Consider sentence (10-a) in comparison to (10-b) and (10-c):

⁶Prior to and during this research I at times contacted a few different native-speaker Italian friends (non-linguists, and not all from Florence) with various questions about sentences with *solo* and *soltanto*. These friends were not participants in the experiments, and their input is entirely informal and meant to be a hint or a clue, rather than empirical evidence. Thus, throughout this thesis when I refer to preliminary research or personal correspondence, I am referring to this informal communication.

⁷Sentences such as the following were regarded by several native speakers in personal correspondence as acceptable and natural:

- (i) Gianni ha comprato ✓*solo*/✓*soltanto* [tre]_F libri ✓*soltanto*.
 INTENDED: *G. only bought THREE books.*

However, it should be noted that one native speaker commented that POST-SOLTANTO here can only refer to the number of books bought (with prosodic prominence on *tre* ‘three’), i.e., the totally-ordered scale, whereas in the pre-position the scale referred to is ambiguous and will depend on which element takes prosodic prominence, i.e., referring either to the totally-ordered scale with prominence on *tre* ‘three,’ or to the partially-ordered scale with prominence on *libri* ‘books.’ This will not be explored further here, although it is certainly of interest for future research.

- (10) a. John is meeting a woman this evening, but it's his sister.
 b. #Peter is talking, but he isn't talking.
 c. #Peter stopped talking, but he wasn't talking earlier.

When stating a sentence such as *John is meeting a woman this evening*, adopted from (Geurts 2009), one is implicating that the woman being met by John is probably of romantic interest to him. This is what is cancelled in the second clause *... but it's his sister*. In contrast, *Peter is talking* asserts that Peter is in fact talking, and to cancel an assertion with *but he isn't talking* is semantically ill-formed. Similarly, in (10-c), the presupposition that Peter was talking prior to the moment of utterance cannot be cancelled without resulting in a semantically odd sentence. In sum, conversational implicature may be cancelled, whereas assertions and presuppositions may not.

Of interest in simple cancellation is whether the prejacent and universal are conversational implicature or not. Consider the sentences in (11):

- (11) a. #**Only** [Bob Dylan]_F played rock music at Newport, but he didn't play rock music there.
 (*prejacent*) *Bob Dylan played rock music at Newport.*
 b. #**Only** [Bob Dylan]_F played rock music at Newport, but somebody else played rock music there (too).
 (*universal*) *No one else played rock music at Newport.*

As can be seen, in English neither the prejacent in (11-a) nor the universal in (11-b) is cancelled under simple negation: thus, neither are conversationally implicated. It is of primary interest here whether all three conditions (PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO) elicit similar results when the prejacent and universal are cancelled.

Negation Visibility to negation is one test for distinguishing assertion from presupposition: the former is visible to negation, and the latter is not (Renans et al. 2011). Consider the following:

- (12) a. Peter stopped talking.
 (*presupposition*) Peter was talking earlier.
 (*assertion*) Peter has stopped talking.
 b. It is not the case that Peter stopped talking.
 (*presupposition*) Peter was talking earlier.
 (*assertion*) Peter has *not* stopped talking.

In (12), the presupposition remains the same whether negation is present or not, and thus it is not visible to the negation; in contrast, the assertion is negated when *not* is present, as in (12-b).

The positive and negative meaning components of EFPs have an asymmetrical relationship in cases of negation and if-clauses. Under negation, this asymmetry means that the prejacent holds while the universal does not. Consider sentence (13):

- (13) a. It is not the case that **only** [Dylan]_F plays folk music.
 b. \rightarrow (*prejacent*) Dylan plays folk music.
 c. \rightarrow (*universal*) No one other than Dylan plays folk music.

Under negation, (13-c) does not follow from (13-a). The invisibility to negation with regard to the prejacent in (13-b) suggests that the positive component is a presupposition, whereas the visibility to negation of the universal in (13-c) suggests that the negative component is an assertion. Again, of interest here is if the prejacent and universal for PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO are visible to negation, and whether or not all three conditions elicit identical results.

Projection out of If-Clauses Projection out of if-clauses provides another way to distinguish assertion from presupposition: presuppositions are held constant when embedded in a conditional clause, whereas assertions are not. Consider (14):

- (14) a. If **only** [Dave van Ronk]_F had recorded *House of the Rising Sun*, then ...
 b. \rightarrow (*Prejacent*) Dave van Ronk recorded *House of the Rising Sun*.
 c. \rightarrow (*Universal*) No one other than Dave van Ronk recorded *House of the Rising Sun*.

In (14), the prejacent (14-b) projects out of the if-clause—i.e., Dave van Ronk having recorded *House of the Rising Sun* still holds—and thus it is a presupposition. On the other hand, the universal (14-c) does not project out of the sentence—(14-c) does not hold, in that it is understood that someone else recorded *House of the Rising Sun*—and thus it follows that it is not a presupposition. As can be seen, projection out of if-clauses is again asymmetric for the prejacent and universal. This test will provide further evidence for whether or not the prejacent and universal are presuppositions; moreover, should PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO be semantic synonyms, then results for the above tests should be identical.

2.4 Sufficiency Modals

Sufficiency modals are expressions in which the EFP express sufficiency, rather than exhaustivity, as in (15), taken from von Fintel and Iatridou (2007).

- (15) If you want a good burrito, you only have to go to the Mission District.

In this example, it is not necessary that one goes to this particular district of San Francisco (i.e., *the only way to get a good burrito is to go the Mission District*), but rather it is sufficient; there are other places to get a good burrito, although it is enough to go to this one.

Sufficiency modals occur cross-linguistically with universal-force modals which have scope under negation (von Fintel and Iatridou 2007). The scope of negation can be illustrated in the following minimal pair:

- (16) a. You must not leave. (*modal* > NEG)
 b. You don't have to leave. (NEG > *modal*)

In (16-a), the modal has scope over the negation (e.g., *it is necessary that you not ...*), whereas in (16-b) the negation has scope over the modal (e.g., *it is not necessary that you ...*). The underlying semantics, as argued by von Fintel and Iatridou (2007), is that EFPs have a split structure: *neg + other than*. For the sufficiency reading, the negation must scope over the modal, i.e., *neg > necessity > other than*.

However, under this analysis the prejacent must be weaker than is typically assumed in order to arrive at the desired reading. Consider, for example, the above sentence, i.e., *You only have to go to the Mission District*. Under this analysis, the prejacent cannot be *It is necessary to go to the Mission District*, as this would not result in the desired sufficiency interpretation. In order to achieve the desired reading, von Fintel and Iatridou (2007) propose that the prejacent is weaker, as in (17-a).

- (17) *If you want a good burrito ...*
 a. (*prejacent*) ... it is necessary to go somewhere.
 b. (*universal*) ... it is not necessary to go anywhere other than the Mission District.

With the weaker prejacent in (17-a), together with the universal in (17-b), the desired interpretation is achieved. For this analysis, I will not delve further into the strength of the prejacent in general, and will simply assume von Fintel and Iatridou (2007)'s weak prejacent analysis in such cases. What is of interest here, though, is whether or not the sufficiency reading is possible for all three conditions (i.e., PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO).

3 Experiment: Semantics

In order to test the semantics of *solo* and *soltanto*, several tests—primarily based on the *Questionnaire on Focus Semantics* (Renans et al. 2011), except for the test on sufficiency modals—were undertaken. The main objectives of the tests are to answer the following questions:

- i) Can *solo* and *soltanto* refer to scales with i) partial-order or ii) pre-order, or both?
- ii) Are both focus particles exhaustive?
- iii) What are the semantic effects on the preajacent and universal in the following: i) simple cancellation, ii) visibility to negation, and iii) projection if-clauses?
- iv) Do all three conditions have a sufficiency modal reading?

3.1 Participants

In total there were 24 participants in the experiment. Participants were native Italian speakers, all of whom grew up within 15–20 kilometers of Florence, Italy. Moreover, in terms of the languages the participants learned as infants, only one reported having learned another language as a child (Hungarian-Italian). Thus, in terms of their native language, the participants in the experiment are relatively uniform.

However, when it came to non-native languages, the participants varied greatly. All participants except two spoke at least one foreign language, and many of them spoke several foreign languages (at most, four) with varying degrees of fluency. The foreign languages spoken by the participants include English, German, French, Swedish, Yiddish, Catalan, and Spanish; fluency ranged from beginner to advanced.

The age range fell between 15–46 years old, with the average age of participants being 30. In all, six men and eighteen women participated.

3.2 Materials and Design

In order to get an overview of the semantic effects of *solo* and *soltanto*, eight tests across 3 questionnaires were conducted (for an overview of the tests, conditions, and number of item sets, see Table 1). By test, I am referring to a group of questions regarding one aspect of the semantics being investigated. For example, one test was concentrated on sufficiency modal readings, whereas another test was whether the preajacent and universal projected out of if-clause, and so on.

<i>Test</i>	<i># of Conditions</i>	<i># of Item Sets</i>	<i>Total Targets</i> (<i>condition x item set</i>)
1. Partial-Order Scale	3	4	12
2. Pre-Order Scale	3	4	12
3. Exhaustivity	3	4	12
4. Simple Cancellation (Preajacent)	3	4	12
5. Simple Cancellation (Universal)	3	4	12
6. Negation	3	4	12
7. Projection out of If-Clauses	3	4	12
8. Sufficiency Modals	3	3	9
<i>Total</i>			<i>93 Targets</i>

Table 1: A Summary of the Tests. The three conditions are PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO.

There were three conditions for manipulation: PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO. Note that the focus particle was adjacent to the focus for all sentences, i.e., [**Focus Particle** [**XP**

[_F] for the pre-position, and [[**XP**]_F **Focus Particle**] for the post-position, which in preliminary research appeared to be the most natural place for the focus particle (cf., for example, English pre-verbal *only* and association with the direct object in ‘*John only kissed Mary*’).

Seven of the tests had 4 item sets, and one of the tests had 3 item sets (the reason for this will be explained below). By item set I mean a group of sentences which are exactly the same except for the experimental manipulation, specifically, the focus particle and its position with regard to the focus (again, PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO). An example of one item set across all three conditions is found in (18).

- (18) a. Francesca ha bollito **solo** [la carne]_F.
 b. Francesca ha bollito **soltanto** [la carne]_F.
 c. Francesca ha bollito [la carne]_F **soltanto**.
F. boiled only the meat.

In this item set, PRE-SOLO is found in (18-a), PRE-SOLTANTO is in (18-b), and POST-SOLTANTO is in (18-c). The three conditions in each item set were distributed across the three questionnaires in a latin square design, so that when, for example, PRE-SOLO appeared for one item set in Questionnaire 1, Questionnaire 2 would have the same sentence but with PRE-SOLTANTO, and so on. (For illustrative purposes, if (18-a) is in Questionnaire 1, then (18-b) would be in Questionnaire 2, and (18-c) in Questionnaire 3. See Table 2 for a visual representation of the latin square distribution.) Thus, across the three questionnaires, the same sentence minus the EFP was able to be presented for all three conditions without repetition for any individual participant.

		Questionnaire 1	Questionnaire 2	Questionnaire 3
	Item Set 1	A	B	C
Test 1	Item Set 2	C	A	B
(example)	Item Set 3	B	C	A
	Item Set 4	A	B	C
	Item Set 1	C	A	B
Test 2	Item Set 2	B	C	A
(example)	Item Set 3	A	B	C
	Item Set 4	C	A	B
And so on...				

Table 2: Latin Square Distribution: A = PRE-SOLO, B = PRE-SOLTANTO, C = POST-SOLTANTO.

Note that for item set 1 the association with focus was with the SUBJECT, for item set 2 the association with focus was with the OBJECT, for item set 3 the association with focus was with the VERB, and for item set 4 the association with focus was with the entire VERB PHRASE. However, one test—sufficiency modals—does not have a sufficiency reading when the EFP associates with the SUBJECT, and so this test had only three item sets.

An important assumption in the design of these tests is that association with focus for a range of syntactic constituents of various grammatical functions will not change the nature of semantic effect. Thus, association with focus for the subject and association with focus for the object, etc., were assumed to be comparable, and results were conflated across all 4 item sets. (PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO had been regarded in preliminary research as associating with all of the above constituents.) At first, this seemed like a reasonable assumption: for example, in the literature on the semantics of EFPs for English, the semantics of exclusives (e.g., exhaustivity, preajacent and universal, scales referred to, etc.) are not reported as being dependent on which constituent or grammatical function is in association with the focus particle. However, this assumption will be

revisited in discussing the results.

There were 24 participants, so each questionnaire was completed by 8 people. Furthermore, in order to minimize any effects of the ordering of the questions, each questionnaire was administered both forward and in reverse, divided evenly among the participants: to be explicit, this means that questionnaire 1 was completed by 4 participants in one direction, and by 4 participants in the reverse direction, and so on for Questionnaire 2 and Questionnaire 3.

Participants were sent a link via e-mail to a questionnaire to be completed online. There was no time limit, and no control of the environment in which they completed the questionnaire. Nonetheless, in the instructions participants were requested to concentrate on the task at hand and not multitask while providing their judgments.

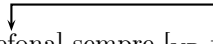
For each questionnaire, there were 93 sentences presented in total, with 31 target sentences and—at a 1:2 target-filler ratio—62 filler sentences. To take stock:

- There were three conditions: PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO, which were distributed across the three questionnaires in a latin square design;
- there were four item sets for 7 of the tests, and three item sets for 1 test (i.e., sufficiency modals);
- each item set consisted of the same sentence repeated three times, differing only in the exclusive focus particle and its position relative to the focus (i.e., PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO);
- the four item sets included associations with focus for 4 grammatical functions/constituents: i) SUBJECT (apart from one test—sufficiency modals), ii) OBJECT, iii) VERB, and iv) VERB PHRASE; however, these are assumed to be comparable, and results across the item sets will be conflated.

Lexical Items No lexical items were repeated for all target sentences; however, out of necessity, functional words such as articles and auxiliary verbs were repeated. The target sentences had a consistent structure: SUBJECT + AUXILIARY + LEXICAL VERB + DIRECT OBJECT. The SUBJECT was always a proper noun (a name), whereas the OBJECT was always a determiner phrase with an article followed by a noun. The LEXICAL VERB was always a past participle.

The syllable structure for all lexical items—with the exception of auxiliaries—was held constant: the SUBJECT, LEXICAL VERB, and OBJECT were three syllables each, with the main accent falling on the penultimate syllable (i.e., WSW, where W is weak and S is strong). The auxiliary verbs varied when necessary: for most of the target sentences, the indicative mood was used (i.e., for the verb *avere* ‘have,’ the form *ha* ‘has’ in the indicative), but for embedding under negation it was necessary to use the subjunctive form of the verb, and for if-clauses it was necessary to use the conditional form (e.g., *abbia* or *avesse*, respectively).

A brief note on the use of auxiliary verbs: Unlike English, an affix lowering language, Italian is a verb raising language (Carnie 2006). Consider the sentences in (19).

- (19) a. Gianni [T ha] sempre [VP telefonato].
 G. has always called
 ‘*Gianni has always called.*’
- 
- b. Gianni [T telefona] sempre [VP t].
 G. calls always
 ‘*Gianni always calls.*’

In sentence (19-a), the auxiliary verb is in T^0 , whereas the verb (presumably) remains in V^0 . The adverb *sempre* ‘always’ in sentence (19-b) remains in the same position, but here the verb moves into T^0 . Compare this now with the English sentences in (20):

- (20) a. Johnny [T^0 has] always [VP called].

- b. Johnny [_{T⁰} |] always [_{VP} call-s].

In sentence (20-b), the suffix for the third person singular ‘hops’ to the verb, leaving the adverb ‘always’ before the main verb when no auxiliary is present; that is, this is the exact opposite of the Italian example, in which the tensed lexical verb moves to T⁰.

In preliminary research for this experiment, PRE-SOLO and PRE-SOLTANTO were regarded as ungrammatical when appearing before a tensed lexical verb; cf. English, which typically has pre-verbal *only*. To illustrate this, consider the grammaticality of the English sentence in (21-a) in comparison to the Italian in (21-b).

- (21) a. Johnny **only** [listens]_F to music (*and he doesn't play it*).
 b. Gianni (***solo**/#**soltanto**) [ascolta]_F la musica (*e non la suona*).

In (21-b), the most natural reading is not the intended one here; rather, *soltanto* is interpreted as being in a post-nominal position associating with the SUBJECT, whereas *solo* is ungrammatical. Thus, including an auxiliary verb (i.e., not having the verb raise to T⁰) allowed for association with focus for verbs and verb phrases with PRE-SOLO and PRE-SOLTANTO.⁸

I will proceed by presenting each test—with examples and results—in turn.

4 Results: Semantics

4.1 Scales with partial-order vs. pre-order

In order to test exclusives with reference to partial-order scales, sentences in affirmation-response pairs were presented, differing in terms of one being a stronger proposition and one a weaker proposition in a partially-ordered set. The first sentence—the affirmation—presents the stronger proposition, which is composed of two conjoined sentences; and the second sentence—the response—presents a weaker proposition by saying that only one of the conjoined entities is true. For an example, consider sentence (22), with the exclusive *solo*.

- (22) a. Francesca ha bollito la carne e le patate.
F. has boiled the meat and potatoes.
 b. No, Francesca ha bollito **solo** [la carne]_F.
No, F. boiled only the meat.

Note that throughout the presentation of the targets, no judgments as to the acceptability of these sentences are marked here—the details of the judgments will be presented in the discussion below. Furthermore, participants did not have any meta-linguistic markers such as focus marking in the presentation of the targets in the questionnaire; the focus phrase was established exclusively by the context.

In example (22), what makes the affirmation stronger is the conjunction of the two propositions, that is, *F. boiled the meat and F. boiled the potatoes*. The response comments on the strength of the affirmation by stating that a weaker proposition is the true proposition, that is, *F. boiled the meat*.

Similarly, exclusives with reference to pre-order scales were also tested with affirmation-response pairs, but these pairs differed in terms of the affirmation being a stronger proposition and the response a weaker proposition in a pre-ordered set. An example is found in the sentences in (23).

- (23) a. Rossella ha venduto le gemme.
R. has sold the gems.

⁸Why tensed verbs in T⁰ do not allow pre-position of EFPs will not be addressed. Nonetheless, this could be an area of interest for future research.

- b. No, Rossella ha venduto **solo** [i sassi]_F.
No, R. only sold the stones.

In this pair, the affirmation is presumed stronger because of the value attributed to *gems* over *stones*; the weaker proposition, the response, excludes anything more than *stones* on the scale of valuable rocks. It was assumed that by including a *single* entity/phrase, which in the response would be replaced with a less-significant entity/phrase, it would help trigger a pre-ordered scale—and not a partially-ordered scale—reading. The entities in the affirmation-response were specifically the following, translated here into English: for the SUBJECT, *Obama* → *Michael* (i.e., some irrelevant male name); for the OBJECT, *the gems* → *the stones*; for the VERB, *sculpt (the bust)* → *smooth (the bust)* (in the sense, ‘clean’); for the VP, *design the skirt suit* → *sew the purse*.⁹

The results of both tests are presented in Tables 3.

Table 3: Partial-Order vs. Pre-Order Scales (Scale: 1 ‘*doesn’t make sense*’ – 9 ‘*makes sense*’)

	Partial-Order			Pre-Order		
	1–3	4–6	7–9	1–3	4–6	7–9
<i>pre-solo</i>	3.1% (1/32)	6.3% (2/32)	90.6% (29/32)	3.1% (1/32)	6.3% (2/32)	90.6% (29/32)
<i>pre-soltanto</i>	3.1% (1/32)	3.1% (1/32)	93.8% (30/32)	3.1% (1/32)	15.6% (5/32)	81.3% (26/32)
<i>post-soltanto</i>	12.5% (4/32)	12.5% (4/32)	75% (24/32)	18.8% (6/32)	21.9% (7/32)	59.4% (19/32)

A tripartite system will be used to summarize the data: for ratings 1–3, I will interpret the sentences as being semantically/pragmatically odd; for ratings 4–6, I will interpret the data as questionable; for ratings of 7–9, I will interpret the sentences as being semantically well-formed. Conflating the ratings in this way makes it easier to generalize the patterns found in the questionnaire.

For the partial-order scales, the minimum ratings generally occur less frequently across all conditions, with a clear skew toward 7–9 (i.e., ‘*makes sense*’) in all conditions. The frequency of the responses between 7–9 make up ca. 91% (29/32) of the responses for PRE-SOLO, ca. 94% (30/32) of the responses for PRE-SOLTANTO, and 75% (24/32) of the responses for POST-SOLTANTO. Accordingly, responses in the 1–3 range and 4–6 range were higher in the POST-SOLTANTO condition than in the other conditions.

Similarly for the pre-order scales, the frequency of the responses 7–9 make up ca. 91% (29/32) of the responses for PRE-SOLO, and ca. 81% (26/32) of the responses for PRE-SOLTANTO. POST-SOLTANTO showed more degradation in the responses than for the pre-position counterparts, at ca. 59% (19/32) of the responses in the 7–9 range. Furthermore, in this condition there was a fairly even spread of responses in the 1–3 and 4–6 range.

4.2 Exhaustivity

For this test, the exhaustivity of the exclusive focus particles was tested. This was done in order to see if all three focus particles obtained an infelicitous reading when two independent clauses—both with an exclusive focus particle—were coordinated. Consider the following sentence:

- (24) a. Peter loved Mary and Peter loved Betty too.

⁹Whether or not the differences between the two entities for each item set will trigger reference to a pre-order scale may be debatable, something which came to my attention after reevaluating the sentences upon reviewing the participants’ responses. In some contexts, it is possible the scale is ambiguous, and reference could be to either a pre-ordered or a partially-ordered scale, i.e., *solo/soltanto* may refer to the fact that R. did not sell other objects than the stones, rather than did not sell objects of more value than the stones. This will be discussed further when discussing the results.

In future research, I would redesign these questions to better trigger pre-order readings. For instance, by not including the article in (23-b) it would have forced a mass reading of the NP, i.e., *R. sold stones* vs. *R. sold the stones*. In that case, the pre-ordered meaning would have been underscored by referencing the material of the object, which—I argue—would have minimized such ambiguity.

- b. #Peter **only** loved [Mary]_F and Peter **only** loved [Betty]_F too.

Since in the first clause in (24-b), *Mary* is identified—via association with focus with *only*—as the unique object of Peter’s love, it is infelicitous to then add another object to Peter’s love, namely *Betty*.

This test was conducted by coordinating two sentences containing the same exclusive particle, with only the focused phrase changing. To illustrate this, consider example (26).

- (25) Serena ha raccolto **solo** [le mele]_F e Serena ha raccolto **solo** [le pere]_F.
S. only harvested the apples and S. only harvested the pears.

(Again, note that no judgments as to the acceptability of these sentences are marked here—the details of the judgments will be presented below.) Similar to the example in (24-b), adding the second clause will be infelicitous if the first clause identifies *apples* as being the unique entity which was harvested. Indeed, this is what was found for all three conditions. The results for this test are shown in table 4.

Table 4: Exhaustivity (Scale: 1 ‘doesn’t make sense’ – 9 ‘makes sense’)

	Exhaustivity		
	1-3	4-6	7-9
<i>pre-solo</i>	90.6% (29/32)	6.3% (2/32)	3.1% (1/32)
<i>pre-soltanto</i>	96.9% (31/32)	3.1% (1/32)	0% (0/32)
<i>post-soltanto</i>	81.3% (26/32)	15.6% (5/32)	3.1% (1/32)

Unlike the tests for partial-order and pre-order scales, the rating frequencies were skewed toward 1–3 (i.e., ‘doesn’t make sense’), as would be expected given an exhaustive interpretation of exclusive focus particles. PRE-SOLO had ca. 91% (29/32) responses in the 1–3 range, PRE-SOLTANTO had ca. 97% (31/32), and POST-SOLTANTO had ca. 81% (26/32). For POST-SOLTANTO, there were some more responses in the 4–6 range than for the other conditions, although these responses still make up a minority of responses at ca. 16% (5/32). The majority of participants found these sentences semantically ill-formed across all conditions; however, again POST-SOLTANTO appears to be slightly less consistent than PRE-SOLO and PRE-SOLTANTO, although the general direction of the judgments (between 1–3) is similar.

4.3 Prejacent and Universal

4.3.1 Simple Cancellation

The purpose of this test is to see if the prejacent and universal are (1) conversationally implicatures, or (2) not (i.e., either presuppositions or assertions). Only conversational implicatures may be immediately cancelled in context; therefore, should simple cancellation be possible, then one can conclude that the prejacent or universal is conversationally implicated. In this test, sentences were presented with an exclusive particle, followed by a clause that cancelled (a) the prejacent, and (b) the universal. An illustrative example is found in the following:

- (26) a. Alfredo ha toccato **solo** [il gatto]_F e, in realtà, Alfredo non ha toccato il gatto.
A. touched only the cat and, actually, A. did not touch the cat.
 b. Giovanna ha aperto **solo** [il vino]_F e, in realtà, Giovanna ha aperto qualcos’altro.
G. opened only the wine and, actually, G. opened something else.

Sentence (26-a) cancels the prejacent, i.e., ‘*A. has touched the cat.*’ Moreover, sentence (26-b) cancels the universal, i.e., ‘*G. has not opened anything other than the wine.*’ Again, all three conditions were tested. A rating between 7–9 (i.e., toward ‘makes sense’) suggests that the prejacent or the universal is

conversationally implicated, whereas a rating between 1–3 (i.e., toward ‘*doesn’t make sense*’) suggests that they are either a presupposition or an assertion.

Table 5: Simple Cancellation: Prejacent and Universal (Scale: 1 ‘*doesn’t make sense*’ – 9 ‘*makes sense*’)

	Prejacent			Universal		
	1–3	4–6	7–9	1–3	4–6	7–9
<i>pre-solo</i>	93.8% (30/32)	3.1% (1/32)	3.1% (1/32)	90.6% (29/32)	6.3% (2/32)	3.1% (1/32)
<i>pre-soltanto</i>	96.9% (31/32)	0% (0/32)	3.1% (1/32)	84.4% (27/32)	12.5% (4/32)	3.1% (1/32)
<i>post-soltanto</i>	96.9% (31/32)	3.1% (1/32)	0% (0/32)	84.4% (27/32)	15.6% (5/32)	0% (0/32)

For the prejacent in all conditions, the results are skewed toward 1–3: for PRE-SOLO ca. 94% (30/32) of responses were between 1–3, for PRE-SOLTANTO ca. 97% (31/32), and for POST-SOLTANTO 97% (31/32). There were only scattered responses between 4–6 and 7–9.

For cancellation of the universal, the results are again clearly skewed toward 1–3 for all conditions. A response of 1–3 occurred for PRE-SOLO 91% (29/32), for PRE-SOLTANTO ca. 84% (27/32), and for POST-SOLTANTO 84% (27/32). Again, there were only scattered responses between 4–6 and 7–9, although the judgments between 4–6 were slightly higher for *soltanto* in both pre- and post-position.

4.3.2 Visibility to Negation

For the tests on visibility to negation and projection out of if-clauses, participants were presented a context and were asked to answer questions regarding both the prejacent and the universal. Unlike the previous tests, the possible answers were not felicity judgments on a 1–9 scale, but rather yes or no responses.

Short contexts were presented, followed by questions regarding (a) the prejacent, and (b) the universal. As an illustrative example, consider the following:

- (27) (*context*) Giovedì Silvano, Alessandro e Caterina sono andati ad una festa. Non è che Silvano abbia bevuto **solo** [la grappa]_F.
Thursday S., A. and C. went to a party. It is not the case that S. drank only grappa.
- a. Silvano ha bevuto la grappa?
Did S. drink grappa?
 - b. Silvano ha bevuto qualcos’altro, a parte la grappa?
Did S. drink something else besides grappa?

The answer ‘yes’ to (27-a) suggests that the prejacent is not visible to negation, and therefore presupposed. On the other hand, ‘no’ suggests that the prejacent is visible to negation, and therefore asserted. In contrast, the answer ‘no’ to question (27-b) suggests that the universal is not visible to negation, and therefore presupposed. On the other hand, ‘yes’ suggests that the universal is visible to negation, and therefore asserted.

For the prejacent in all three conditions, 100% (32/32) of the participants chose the answer ‘yes.’ Similarly, for the universal 100% (32/32) said ‘yes’ for PRE-SOLO and PRE-SOLTANTO, and ca. 94% (30/32) responded ‘yes’ for POST-SOLTANTO.

Table 6: Visibility to Negation: Prejacent and Universal

	<i>Prejacent</i>			<i>Universal</i>		
	<i>yes</i>	<i>no</i>	<i>total</i>	<i>yes</i>	<i>no</i>	<i>total</i>
<i>pre-solo</i>	32	0	32	32	0	32
<i>pre-soltanto</i>	32	0	32	32	0	32
<i>post-soltanto</i>	32	0	32	30	2	32
<i>total</i>	96	0	96	94	2	96

4.3.3 Projection out of If-Clauses

Projection out of if-clauses can help determine if the prejacent and universal are presuppositions, as presuppositions project out of the if-clause. Short contexts were presented, followed by questions regarding (a) the prejacent, and (b) the universal. As an illustrative example, consider the following:

- (28) (*context*) Maria e Paolo hanno fatto una festa a casa loro. Se **solo** [Gisella]_F avesse mangiato la torta, avrebbero avuto molto più dessert.
M. and P. had a party at their house. If only G. had eaten the cake, they would have had much more dessert.
- Gisella ha mangiato la torta?
Did G. eat cake?
 - Qualcun'altro, a parte Gisella, ha mangiato la torta?
Did anybody other than G. eat cake?

The answer 'yes' to (28-a) shows that the prejacent is held constant in if-clauses, and thus it is presupposed; similarly, the answer 'no' to question (28-b) suggests that the universal is held constant, and thus presupposed. A response of 'no' to (28-a) or 'yes' to (28-b) is inconclusive. The results are found in Table 7.

Table 7: Projection out of If-Clauses: Prejacent and Universal

	<i>Prejacent</i>			<i>Universal</i>		
	<i>yes</i>	<i>no</i>	<i>total</i>	<i>yes</i>	<i>no</i>	<i>total</i>
<i>pre-solo</i>	27	5	32	27	5	32
<i>pre-soltanto</i>	27	5	32	29	3	32
<i>post-soltanto</i>	30	2	32	28	4	32
<i>total</i>	84	12	96	84	12	96

For the prejacent, most respondents chose 'yes' in all conditions. Specifically, ca. 84% (27/32) of the participants chose the answer 'yes' for PRE-SOLO and PRE-SOLTANTO, and ca. 94% (30/32) chose 'yes' for POST-SOLTANTO. Again, for the universal most respondents chose 'yes' across all conditions. Specifically, ca. 84% (27/32) responded 'yes' for PRE-SOLO, ca. 91% (29/32) for PRE-SOLTANTO, and ca. 88% (28/32) responded 'yes' for POST-SOLTANTO.

4.4 Sufficiency Modals

In this test, sufficiency readings were tested across 3 grammatical functions (OBJECT, VERB, and VERB PHRASE) for all three conditions. Note that a sufficiency reading is not possible when the EFP associated with the subject, and so this was not tested. An example sentence used in the questionnaire is found in (29).

- (29) (*context*) Per riparare il tavolino, devi **solo** [usare la colla]_F.
To repair the little table, you only have to use the glue.

- a. È sufficiente usare la colla, anche se ci sono altri modi per riparare il tavolino.
It is sufficient to use glue, even if there are other ways to repair the little table.
- b. L'unico modo per riparare il tavolino è usare la colla.
The only way to repair the little table is to use glue.
- c. Nessuna delle due.
Neither of the two

When asked which interpretations were possible, participants were able to choose the following four options: (a), (b), both (a) and (b), or (c), thus corresponding to sufficiency reading, exclusive reading, both readings, or neither, respectively. The results are found in Table 8.

Table 8: Sufficiency Modals

	(a) <i>sufficiency</i>	(b) <i>unique</i>	(c) <i>both</i>	(d) <i>neither</i>	<i>total</i>
<i>pre-solo</i>	17	1	5	1	<i>24</i>
<i>pre-soltanto</i>	18	5	1	0	<i>24</i>
<i>post-soltanto</i>	11	8	3	2	<i>24</i>
<i>total</i>	<i>46</i>	<i>14</i>	<i>9</i>	<i>3</i>	<i>72</i>

If the results are conflated to reflect a sufficiency readings (i.e., *sufficiency* or *both*) vs. non-sufficiency readings (i.e., *unique* or *neither*), a clearer distinction between PRE-SOLO and PRE-SOLTANTO in comparison to POST-SOLTANTO emerges.

Table 9: Sufficiency Modals: Sufficiency vs. Not Sufficiency

	<i>sufficiency</i>	<i>not sufficiency</i>	<i>total</i>
<i>pre-solo</i>	22	2	<i>24</i>
<i>pre-soltanto</i>	19	5	<i>24</i>
<i>post-soltanto</i>	14	10	<i>24</i>
<i>total</i>	<i>55</i>	<i>17</i>	<i>72</i>

Results here are mixed. PRE-SOLO had a sufficiency reading ca. 92% (22/24) of the time, and PRE-SOLTANTO had a sufficiency reading 79 % (19/24) of the time; in contrast, POST-SOLTANTO had a sufficiency reading only ca. 58% (14/24) of the time, with ca. 42% (10/24) of the respondents regarding the sufficiency reading not possible..

5 Discussion: Semantics

An overview of the results for all felicity judgment tasks (1–9 scale) is found in Table 10: the symbol ✓ means the sentences were judged as ‘making sense,’ whereas ✗ means the sentences were judged as ‘not making sense’; ? is questionable.

Table 10: Results

	<i>Partial-Order</i>	<i>Pre-Order</i>	<i>Exhaustivity</i>	<i>Cancellation (Prej.)</i>	<i>Cancellation (Univ.)</i>
PRE-SOLO	✓	✓	✗	✗	✗
PRE-SOLTANTO	✓	✓	✗	✗	✗
POST-SOLTANTO	✓	?	✗	✗	✗

Similarities and Differences The results for PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO are similar across all tests except for one. To illustrate this, consider Table 11 with a side-by-side comparison of the percentage of responses of 7–9 for partial-order and pre-order scales, and the percentage of 1–3 responses for exhaustivity and simple cancellation.

Table 11: Comparison of Percentages

	<i>Pre-Solo</i>	<i>Pre-Soltanto</i>	<i>Post-Soltanto</i>
<i>Partial-Order</i>	90.6% (7–9)	93.8% (7–9)	75.0% (7–9)
<i>Pre-Order</i>	90.6% (7–9)	81.3% (7–9)	59.4% (7–9)
<i>Exhaustivity</i>	90.6% (1–3)	96.9% (1–3)	81.3% (1–3)
<i>Cancellation: Prejacent</i>	93.8% (1–3)	96.9% (1–3)	96.9% (1–3)
<i>Cancellation: Universal</i>	90.6% (1–3)	84.4% (1–3)	84.4% (1–3)

PRE-SOLO showed the least variation: across the board the responses were consistently above 90%. PRE-SOLTANTO showed slightly more variation, but tended to pattern more closely with PRE-SOLO. POST-SOLTANTO, however, showed the most variation, and in one case—pre-order scales—received a rating between 7–9 just ca. 59% of the time; moreover, responses in the 1–3 and 4–6 range were higher in this condition than for PRE-SOLO and PRE-SOLTANTO. For these reasons, in Table 10 POST-SOLTANTO is marked with a question mark.

Now consider the following table, in which the results for pre-order scales with POST-SOLTANTO are broken down per item set.

Table 12: Pre-Order Scales: Results for POST-SOLTANTO per item set. NB Item set 1 had association with focus for the SUBJECT, item set 2 the OBJECT, item set 3 the VERB, item set 4 the VERB PHRASE; (Scale: 1 ‘*doesn’t make sense*’ – 9 ‘*makes sense*’)

	<i>Pre-Order Scales: POST-SOLTANTO</i>		
<i>rating</i>	<i>1–3</i>	<i>4–6</i>	<i>7–9</i>
<i>Item Set 1</i> (SUBJECT)	37.5% (3/8)	25% (2/8)	37.5% (3/8)
<i>Item Set 2</i> (OBJECT)	25% (2/8)	25% (2/8)	50% (4/8)
<i>Item Set 3</i> (VERB)	12.5% (1/8)	12.5% (1/8)	75% (6/8)
<i>Item Set 4</i> (VERB PHRASE)	0% (0/8)	25% (2/8)	75% (6/8)

Here a pattern emerges: association with focus for item set 1 (SUBJECT) and item set 2 (OBJECT) were considerably more variable than that for item set 3 (VERB) and item set 4 (VERB PHRASE), suggesting that conflating the results for association with different constituents of grammatical functions—as discussed in Subsection 3.2 regarding the preparation of the questionnaire—may not be justified here. Item set 1 has the most variability, with as many judgments in the 1–3 range as the 7–9 range. Item set 2 had a stronger tendency toward 7–9, with evenly mixed results in the 1–3 and 4–6 range. In contrast, item sets 3 and 4 had a stronger tendency for responses in the 7–9 range (75%).

There are a few possible explanations for these results: 1) there are different structural positions available for the different scales, 2) the scales in some of the target sentences are ambiguous, or 3) item sets 1 and 2 contain ungrammatical or unusual sentences.

- 1) DIFFERENT STRUCTURES-DIFFERENT SCALES: The first explanation for these differences is that POST-SOLTANTO refers to different scales depending on which argument it is associating with, e.g., for SUBJECTS post-position *soltanto* may refer to scales with partial order, whereas for VERB PHRASES, post-position *soltanto* may refer to scales with either partial-order or

pre-order. Should this be the case, one could postulate that the semantic-syntax interface for EFPs is very robust—for one focus particle (e.g., post-position *soltanto*), some structural positions would allow reference to certain scales, others not. Nonetheless, this hypothesis would need to be tested with many more item sets for results to be conclusive, but may be an area of interest for future research.

- 2) **AMBIGUOUS SCALES:** It is possible that POST-SOLTANTO may not refer to scales with pre-order under any circumstances, and the data for item sets 3 and 4 is due to ambiguity of the scales in the target sentences tested here (as mentioned in Subsection 4.1). If the scale referred to was ambiguous, POST-SOLTANTO would be able to refer to whichever scale results in felicity—in that case, responses would be positive. In contrast, other sentences, such as item set 1 and 2, may be less ambiguous, for example, more saliently referring to pre-ordered scales, which would thus result in more negative responses. In this way, ambiguity of the scales in the target sentences may have made the results inconsistent.
- 3) **UNGRAMMATICAL SENTENCES:** It is possible that the sentences in item set 1 and item set 2 are just poorly-formed sentences, or that some lexical item caused infelicity, independent of POST-SOLTANTO. If that were the case, then similar variance should be found for the other two conditions as well. This can be rejected, as item set 1 and item set 2 for PRE-SOLO and PRE-SOLTANTO were relatively uniform across all item sets.

Although differences are clearly present for POST-SOLTANTO with pre-order scales, without further data, I will assume for now that POST-SOLTANTO with such scales is questionable at worst, and acceptable at best. Despite the variability in responses, the frequency of positive responses was still generally higher than for the low or middle-range responses, and more data would be necessary to conclude that any of the above reasons hold. Nonetheless, further research is certainly desired.

The overall negative results for cancellation of the prejacent and universal, as shown in Table 10, suggest that neither is conversational implicature in any of the conditions. Furthermore, an overview of the results for yes-no tasks, as shown in Table 13, suggests that across all conditions the prejacent is a presupposition, whereas the universal is an assertion.

Table 13: Results: NB ‘Not Visible’ means it was not visible to negation, whereas ‘Visible’ means it was visible to negation. ‘Projects’ means it projects out of the if-clause, whereas ‘Does Not Project’ means it does not project out of the if-clause.

	<i>Negation</i> (<i>Prejacent</i>)	<i>Negation</i> (<i>Universal</i>)	<i>If-Clause</i> (<i>Prejacent</i>)	<i>If-Clause</i> (<i>Universal</i>)
PRE-SOLO	Not Visible	Visible	Projects	Does Not Project
PRE-SOLTANTO	Not Visible	Visible	Projects	Does Not Project
POST-SOLTANTO	Not Visible	Visible	Projects	Does Not Project

Results indicate that the prejacent for all three conditions is a presupposition: the prejacent was not visible to negation, and it projected out of if-clauses. On the other hand, results indicate that for all conditions the universal is asserted, as the universal was visible to negation.

One tendency that was clear was the general degradation of responses for POST-SOLTANTO. Whereas PRE-SOLO and PRE-SOLTANTO tended to have more clear-cut results, POST-SOLTANTO consistently showed more variability. Perhaps one factor influencing the results is the relative infrequency of the EFP in this position compared to the other two conditions. Although no corpus study was undertaken for this thesis, informally the following was conveyed in personal correspondence by different native speakers: whereas PRE-SOLO is common, PRE-SOLTANTO is less so, and POST-SOLTANTO is the least common of the three (as mentioned in the introduction). Furthermore, *soltanto* was described as perhaps being of a slightly higher register. Frequency and register may provide an explanation for

some of the differences found here, and could be of interest for future studies.

To take stock, the following was found for PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO:

- i) All three may refer to a partially-ordered scales, and all three may refer to pre-ordered scales, although in this case results are less clear for POST-SOLTANTO;
- ii) the exclusive particles are exhaustive;
- iii) the preajcent is presupposed, and the universal is asserted.

For the purposes of this paper, I will consider all three conditions as semantic synonyms, with differences that may have to do with frequency or register. Nonetheless, POST-SOLTANTO when referring to pre-order scales requires further study.

Sufficiency Modals For sufficiency modal readings, POST-SOLTANTO again showed differences in comparison to the other two conditions. Note that association with focus for the OBJECT and VERB PHRASE with *soltanto* in a post-position requires that the exclusive comes at the very end of the sentence. As an illustration, consider the following examples:(30) for association with the VERB PHRASE, and (31) for association with the OBJECT; cf. (32) for association with the VERB.

- (30) Per riparare il tavolino, devi ✓**solo**/✓**soltanto** [usare la colla]_F ***soltanto**.
INTENDED: *To repair the little table, you have to use the glue only.*
- (31) Per andare a Viterbo, devi prendere ✓**solo**/✓**soltanto** [il treno]_F ?**soltanto**.
INTENDED: *To go to Viterbo, you have to take the train only.*
- (32) Per superare il corso, devi ✓**solo**/✓**soltanto** [seguire]_F ✓**soltanto** il corso.
INTENDED: *To pass the class, you only have to attend the class.*

If the data is further broken down for POST-SOLTANTO in terms of which argument was associating with the exclusive, as in Table 14, it becomes clear that the sentence-final position for POST-SOLTANTO is either questionable or dispreferred with a sufficiency-modal reading, whereas for the verb this was not the case—100% (8/8) of the responses said that a sufficiency modal reading was possible in this position.

Table 14: Sufficiency Modals: Post-Soltanto: Sufficiency vs. Not Sufficiency

	<i>sufficiency</i>	<i>not sufficiency</i>	<i>total</i>
<i>verb phrase</i>	2	6	8
<i>object</i>	4	4	8
<i>verb</i>	8	0	8
<i>total</i>	14	10	24

What appears to be happening here is that there is a scope problem in this position. Recall the von Stechow and Iatridou (2007) dissect *only* into two components: negation + other than. The sufficiency modal reading is possible when the negative element scopes over the modal. In sentence-final position, however, the negation presumably cannot scope over the modal—an issue for syntax. This leads to the next section: here, the syntactic position of the EFPs will be explored, and the issue of scope will be investigated further.

Part II

Syntax

6 Introduction: Syntax of *Solo* and *Soltanto*

This section will proceed as follows: First, three hypotheses will be formulated which will form the theoretical motivation for the second questionnaire. Based on these hypotheses, I will present several tests to investigate the syntax of *solo* and *soltanto*: In Subsection 6.1, non-contiguous association with focus will be discussed, that is, cases in which the focus is not directly adjacent to the focus particle. In Subsection 6.2, the principle ideas of NPI licensing will be outlined, along with the details of Wagner (2005)'s arguments for a movement analysis based on NPI-licensing. For the final test, Subsection 6.3 will present LF intervention effects. Following this introduction, Section 7 will describe the second questionnaire in detail, and Section 8 the results. Finally, Section 9 will conclude this part by discussing the results.

3 Hypothesis There are three hypotheses which will motivate this research:

HYPOTHESIS 1 (Right/Left Branching): pre-position *solo* and *soltanto* and post-position *soltanto* are at the same structural position above the larger constituent containing the focus, but *solo* is right-branching, whereas *soltanto* is both right/left-branching.

HYPOTHESIS 2 (Covert/Overt Movement): pre-position *solo* and *soltanto* involve covert movement for association with focus, whereas post-position *soltanto* is the overt realization of this same process. In this way, pre- and post-position are related by movement.

HYPOTHESIS 3 (Two Structural Positions): there are different structural positions for the pre- and post-position, the former appearing at a higher structural position, the latter at a lower structural position, specifically on the focus itself.

HYPOTHESIS 1: Right/Left-Branching *Soltanto* One possible account for the syntactic variation is that pre-position *solo* and *soltanto* and post-position *soltanto* are at the same structural position, but *solo* is right-branching, whereas *soltanto* is both right- and left-branching. That *soltanto* is right/left branching means that the focus particle appears both before and after the focus. Although nothing of this sort has been proposed in the literature for other focus particles—at least as far as this author knows—such an analysis has been proposed to account for the different position of adjuncts in English (Adger 2002, Carnie 2006). For example, consider the following (from Adger (2002)):

- (33) a. Quickly kiss Anson.
b. Kiss Anson quickly.

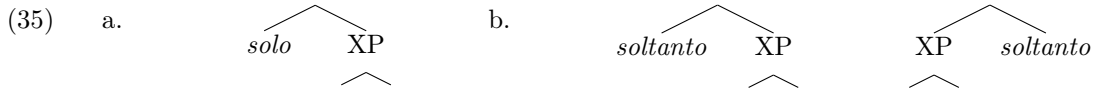
As can be seen in example (33), the adverb can appear either to the left or the right of the VP. Here, the adjunct *quickly* is analyzed as being structurally above the maximal projection and as not receiving any θ -role—general properties of adjoined elements, and similar to EFPs.

Furthermore, other characteristics suggest that *solo* and *soltanto* are akin to adjuncts in other ways. For example, a sentence with a focus particle is distributionally identical to the same sentence without the focus particle. To illustrate this, consider the following sentences (adopted from Adger (2002)):

- (34) a. (Only) listen to Bob Dylan!
b. I (only) listen to Bob Dylan.
c. *(Only) listen to Bob Dylan is the best thing to do.
d. (Only) listening to Bob Dylan is the best thing to do.

The acceptability of the above sentences is independent of the EFP: judgments are the same with or without the focus particle.

That adjuncts and the focus particle *soltanto* share many characteristics—among them appearing both before and after the phrase—could suggest that their syntactic structures are similar. Applying a right-branching structure to *solo* and a right/left-branching one to *soltanto* is straightforward. Right-branching *solo* is represented in (a), whereas in (b) both a right-branching and left-branching *soltanto* is represented.

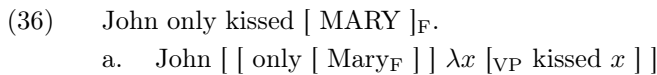


It is worth noting that this hypothesis does not reject association via movement, as will be discussed further for hypothesis 2—in fact, a movement analysis may still be motivated on independent grounds. On the other hand, if association via movement is not motivated, this would have no bearing on the possibility of hypothesis 1. An alternative in-situ analysis (such as, for example, the ‘alternative semantics’ of Rooth (1992)) would also be able to account for association with focus with a right/left branching structure.¹⁰

The prediction for HYPOTHESIS 1 is as follows:

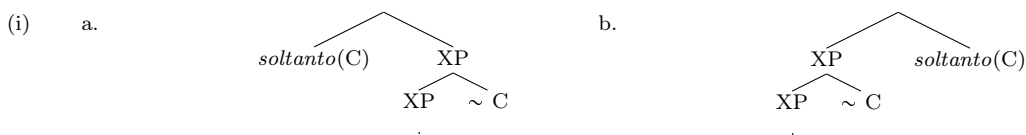
- The main difference between pre-position and post-position is whether the focus particle is right or left branching; thus, in either position, *soltanto* should show no differences in hierarchical relationships, such as, for example, scope. It is worth noting that this hypothesis would conflict with the scope differences found for POST-SOLTANTO in sufficiency modal readings (i.e., in which the negative meaning component does not scope over the modal in sentence-final position).

HYPOTHESIS 2: Covert/Overt Movement Going back to Chomsky (1976), association with focus has been assumed to involve covert movement to the focus sensitive operator (Reich 2002). As an example, consider the following example.



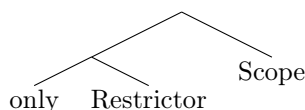
The focussed phrase *Mary* has covertly moved into a position to build a constituent with *only*, from where the FP has direct access to the element it associates with. There are syntactic arguments for a covert movement analysis, such as, for example, the behavior of NPI-licensing (Wagner 2005). In Wagner (2005)’s analysis, the ‘syntactic restrictor’ is the element in focus with *only*, whereas the part of the sentence not associating with the focus particle is called the scope. A general representation is as follows:

¹⁰Following Rooth (1992)’s analysis, one could adapt the alternative semantics approach—i.e., the covert squiggle operator \sim introducing the context domain C at the sister of the focused phrase—for a right/left-branching focus particle, as in:



The syntactic relationships of a tree such as (a) are identical with its mirror structure in (b), and there is no reason to assume that the semantic composition should be altered or changed in any way.

(37)



The basis of Wagner (2005)’s argument for association via covert movement is the licensing of NPIs in the scope, but not in the restrictor of a sentence with a focus sensitive operator. Consider the following, in which the restrictor is underlined and the NPI in italics (from Wagner (2005)):

- (38) a. **Only** John ate *any* kale.
 b. ***Only** any students ate kale.

In (38-a), *any* is licensed in the scope of the sentence, whereas in (38-b), the NPI in the restrictor results in ungrammaticality. The process of association via movement will move the focus into the restrictor of the exclusive. Consider the following:

- (39) a. John **only** gave any kale to [HIS]_F friends.
 b. John **only** gave [KALE]_F to any of his friends.

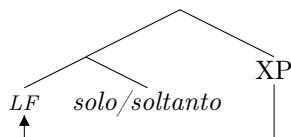
In (40-a), the association with *his* in will move the DP into the complement position of *only*, and in (40-b) this same movements occurs for *kale*.

- (40) a. John [[only]_{restrictor} his friends]_F λx [scope gave any kale to x]
 b. John [[only]_{restrictor} kale]_F λx [scope gave x to any of his friends]

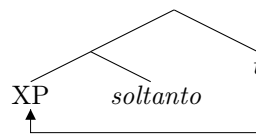
Importantly, this movement allows for NPI-licensing with one argument of the verb phrase, as the other argument has moved into the restrictor of the EFP—which could not be explained by a non-movement theory in which the entire VP is in the restrictor of the focus particle.

In an extension of Wagner (2005)’s proposal for movement via focus, HYPOTHESIS 2 is that PRE-SOLO and PRE-SOLTANTO involve covert movement to the syntactic restrictor of the focus particle (a), whereas POST-SOLTANTO is the overt realization of this same process (b).

(41) a.



b.



Under this hypothesis, *solo* and *soltanto* would have one syntactic structure, differing only in whether the movement is covert in the case of PRE-SOLO and PRE-SOLTANTO, and overt in the case of POST-SOLTANTO. Note that the focus particle is assumed to have its complement position to the left of the EFP, which would only be apparent in the case of POST-SOLTANTO. The predictions and conclusions for HYPOTHESIS 2 are as follows:

- The only structural difference between pre-position and post-position is whether the movement is covert or overt; thus, surface realizations of *soltanto* are predicted to show no differences in syntactic relationships, such as, for example, scope.
- Should movement constraints hold for overt movement, the same movement constraints will hold for covert movement, and vice versa.
- Unless restrictions are formulated for overt movement, the structure in (41) will overgenerate sentences in the grammar, such as, for example, overtly moving the OBJECT into the restrictor of *soltanto* when the exclusive is positioned before the verb—this is the assumed covert LF movement, although it would be a word salad if overt. This will be discussed more in Subsection 6.1 for non-contiguous association with focus.

HYPOTHESIS 3: Two Structural Positions In this hypothesis, pre- and post-positions have two different structural positions: pre-positions are realized at an upper node, scoping over the larger

constituent containing the focus, whereas post-positions are realized at a lower node, specifically at the most deeply-embedded focus-marked element.

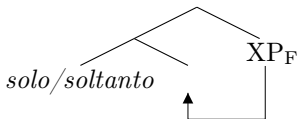
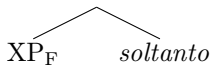
Furthermore, from this position, it would be assumed that *soltanto* can project focus onto the larger constituent. Recall that focus marking may project up from the focus-marked element, as in the following, repeated from Section 2:

- (42) a. Greil Marcus wrote a book about [DYLAN]_F.
 (*Who did Greil Marcus write a book about?*)
 b. Greil Marcus wrote a book [about DYLAN]_F.
 (*What kind of book did Greil Marcus write?*)
 c. Greil Marcus wrote [a book about DYLAN]_F.
 (*What did Greil Marcus write?*)
 d. Greil Marcus [wrote a book about DYLAN]_F.
 (*What did Greil Marcus do?*)

Focus projection permits the extension of focus from an element carrying the pitch accent onto the larger constituent. This same focus projection could explain how *soltanto* may refer to just the DO or the entire VP:

- (43) a. Francesca ha bollito [DP la carne]_F ✓*soltanto*.
F. boiled only the meat.
 b. Pasquale ha [VP grigliato il pesce]_F ✓*soltanto*.
P. only grilled the fish.

Again, movement may or may not be motivated on independent grounds for pre-position *solo* and *soltanto* (a); for POST-SOLTANTO, however—since the focus particle is realized on the focus-marked constituent, as in (b)—there is no reason to assume movement is involved for association with focus in this position.

- (44) a.  b. 

The predictions and conclusions for HYPOTHESIS 3 are as follows:

- Scope differences exist for pre- and post-position. Specifically, pre-position *solo* and *soltanto* will scope over the larger constituent containing the focus, as it located at a position higher in the tree than its focus, whereas post-position will not, as it is at the most deeply focus-marked element. However, from this position it may project focus upward, but only if the entire constituent is the focus.
- Movement may or may not be motivated for association with focus with pre-position *solo* and *soltanto*; however, given its location directly following the focus, for post-position it will be assumed that there is no need to postulate movement.

In order to test these hypotheses, several tests were conducted in the format of a questionnaire. These tests include the following: 1) non-contiguous association with focus (that is, when the focus particle is not adjacent to the focus phrase), described in detail in Subsection 6.1—the goal of this test is to determine where (and how high) in the tree the focus particles are located; 2) NPI-licensing in islands in Subsection 6.2—the goal of this test is to ascertain whether the pre- and post-position are related by movement; and 3) intervention effects in Subsection 7—the goals of this test are to determine whether or not covert movement is motivated for *solo* and *soltanto*.

6.1 Non-Contiguous Association with Focus

Association with focus does not require that the element in focus be adjacent to the focus particle. In English, for example, it is enough to have the EFP c-command the focus within the larger constituent the FP adjoins to, as in (45-a); cf. (45-b).

- (45) a. John **only** kissed [MARY]_F (and not, for example, Jane).
 b. John kissed **only** [MARY]_F (and not, for example, Jane).

Association with focus with an element not adjacent to the EFP will be called non-contiguous association with focus. However, Büring and Hartmann (2001), in their paper on the syntax and semantics of German focus particles, argue for a general principle called ‘Closeness,’ which requires that the focus particle be “as close to the focus as possible.” This principle correctly predicts—for German, as well as for comparable sentences in English and Italian—that non-contiguous association with focus for the German focus particle *sogar*, ‘even’ is not licit when the focus phrase is separated by the subject from the focus particle. (Example sentences are from Büring and Hartmann (2001).)

- (46) a. Gestern hat Rufus **sogar** [dem MÄDCHEN] Blumen geschenkt.
 yesterday has Rufus even the-DAT girl flowers given.
 b. #Gestern hat **sogar** Rufus [dem MÄDCHEN] Blumen geschenkt.
 yesterday has even Rufus the-DAT girl flowers given.

Note that Büring and Hartmann (2001) mark these sentences with *, whereas for consistency in this thesis I have used the hash mark # to indicate that the sentence is infelicitous with the intended focus. A closer look at comparable English and Italian sentences, with association over the subject in TP, shows that these are also ill-formed. Assuming T is right-headed in German, and there is T-C movement for tensed verbs in main clauses, the subject *Rufus* is in SpecTP, as below:

- (47) #Gestern hat **sogar** [_{SpecTP} Rufus [_{T'} [_{VP} [dem MÄDCHEN]_F Blumen geschenkt] [_T t]]].

When comparing this sentence to its English (48-a) and Italian (48-b) equivalents, association with focus is equally illicit:

- (48) a. #Yesterday even [_{TP} [_{SpecTP} Rufus] [_{T'} [_T has] [_{VP} given the GIRL flowers]]].
 b. #Ieri perfino [_{TP} [_{SpecTP} Rufus] [_{T'} [_T ha] [_{VP} dato alla RAGAZZINA dei fiori]]].

However, ‘Closeness’ would incorrectly exclude sentences such as (49), with focus on *Blumen* ‘flowers,’ which—in personal correspondence with several native speaker German linguistics students—was regarded as acceptable and natural with the intended meaning.

- (49) Gestern hat Rufus **sogar** dem Mädchen [BLUMEN] geschenkt.
 yesterday has Rufus even the-DAT girl-PL flowers given.
 INTENDED *Yesterday Rufus even gave the girl FLOWERS (along with the other things he gave her).*

Here I argue that the constraints on non-contiguous association with focus might not be as restrictive as the ‘Closeness Principle’ would suggest.¹¹

Thus, non-contiguous association with focus may be possible in certain structural positions, providing a potential test for whether pre- and post-position c-command the larger constituent containing the focus. As demonstrated with the sentence (45-a) for English, and furthermore (49) for German, a focus particle before the VP may associate with an element within the VP that is not directly adjacent to said focus particle. For the Italian EFPs *solo* and *soltanto*, should non-contiguous association with

¹¹The ungrammaticality of (46-b) may be due to association with focus over the subject in SpecTP, and not a ‘Closeness Principle’ in general. Why the focus particle is able to non-contiguously associate with elements within the VP, but not within TP, is beyond the scope of this paper.

focus inside a VP be possible—and c-command is assumed a necessary condition for association with focus—then the EFP must be at a higher node in the tree than the focus.

6.2 NPIS

Wagner (2005) looks at the licensing of Negative Polarity Items (NPIs) to build a case for a movement analysis. The following section will first present a brief discussion on both negative expressions and NPIs, as well as an explanation of Strawson Downward-Entailment. This will be followed by the argument for association with focus via movement, as outlined in Wagner (2005).

Not all NPIs are the same, and neither are the negative expressions that license them; in the hierarchy of negative expressions, Zwarts (1997)'s regards strong negation as expressions such as *no N* or *none of the N*, and weak expressions as those phrases such as *few N* or *at most n N*. Subsequently, Zwarts (1997) identifies various types of polarity according to their licensing environment. This includes strong and weak negative polarity items: strong NPIs are those which are licensed under strong negation (e.g., so-called n-words, such as *nobody*), whereas weak NPIs are licensed under both strong and weak negation (e.g., *few N*) (Zwarts 1997, Sailer 2009).

As an example, consider the following English sentences, adapted from Sailer (2009) (the NPI is in italics):

- (50) Weak NPI 'ever'
- a. *Five students have *ever* read *Sense and Sensibility*.
 - b. At most five students have *ever* read *Sense and Sensibility*.
 - c. None of the students have *ever* read *Sense and Sensibility*.
- (51) Strong NPI 'lift a finger'
- a. *Five students *lifted a finger* after the party.
 - b. ?At most five students *lifted a finger* after the party.
 - c. None of the students *lifted a finger* after the party.

Note that my judgments here for (51-b) differ slightly from the comparable sentence in Sailer (2009), in that Sailer regards the sentence as ungrammatical, whereas I judge it as questionable. As a native English speaker, I find the sentence to be much better—in the intended meaning—than sentence (51-a), though worse than (51-c), hence the question mark.

NPIs are also licensed by *only*; furthermore, according to Wagner (2005) this is true for both weak and strong NPIs.¹²

- (52)
- a. *Linguistics students ever read Geoff Pullum these days.
 - b. Only linguistics students ever read Geoff Pullum these days.
 - c. None of the linguistics students ever read Geoff Pullum these days.
- (53)
- a. *The linguistics students lifted a finger after the party.
 - b. Only the linguistics students lifted a finger after the party.
 - c. None of the linguistics students lifted a finger after the party.

It has been argued that NPIs are licensed in environments of downward entailment (Wagner 2005). Downward entailment can be understood (somewhat informally) like so:

- (54) An operator OP is downward entailing if $Y \subseteq X$, and $OP(X) \rightarrow OP(Y)$.

In other words, the sentence '*John ate fish*' is a subset of '*John ate*' ($Y \subseteq X$), and the negated sentence '*John did not eat*' ($OP(X)$) implies '*John did not eat fish*' ($OP(Y)$) (Zwarts 1997). Other examples include the following:

¹²Wagner (2005) claims the exclusively strict NPIs—those that require an anti-additive context—are not licensed by *only*.

- (55) a. Nothing works. \rightarrow Nothing works well.
 cf. Something works. \rightarrow Something works well. (Zejstra 2004)
 b. Every student knows McCawley. \rightarrow Every linguistics student knows McCawley.
 cf. Some student knows McCawley. \rightarrow Some linguistics student knows McCawley. (Wagner 2005)

Note that *every* is downward entailing in its restrictor, but not in its scope. To show this, compare (55-b), repeated below with the restrictor underlined, with the following, both taken from Wagner (2005):

- (56) a. Every student knows McCawley. \rightarrow Every linguistics student knows McCawley.
 b. Every student knows a famous linguist. \rightarrow Every student knows McCawley.

Accordingly, *every* may license NPIs in its restrictor (given downward-entailment), not its scope; see Wagner (2005) examples.

The focus particle *only*, however, presents a problem: as mentioned previously, *only* licenses NPIs, but *only* is not downward entailing! Consider the following sentences:

- (57) a. Only John ate vegetables. \rightarrow Only John ate kale.
 b. Only students ate kale. \rightarrow Only linguistics students ate kale.

Downward entailment is found neither in the scope (57-a) nor the restrictor (57-b).

In order to resolve this problem, van Fintel (1999) uses a weaker form of downward entailment, called ‘Strawson-entailment’: “[Strawson-]entailment [...] will only check whether an inference is truth-preserving under the assumption that all the [...] *presuppositions of premises and conclusion* are satisfied” [italics added]. Basically, ‘Strawson-entailment’ says that the subset of a statement is true if the presupposition of the subset is true.

To better demonstrate Strawson-entailment, first consider the following statement:

- (58) Only John ate vegetables.

Starting with this premise, now consider the conclusion and its presupposition:

- (59) a. Only John ate kale.
 b. (*presupposition of the prejacent*) John ate kale.

Starting with the premise in (58), and assuming the presupposition ‘*John ate kale*,’ is true, then it follows that ‘*Only John ate kale*.’ To spell it out one more time, starting from the beginning:

- (60) a. eat kale \subseteq eat vegetables
 b. (*presupposition of the prejacent*, assumed true) John ate kale.
 c. Only John ate vegetables. \rightarrow Only John ate kale.

The above example demonstrates Strawson-entailment for the scope of the sentence with the operator *only*. Applying this same logic to the restrictor will show that the restrictor is not an environment in which Strawson-entailment holds, as in the following:

- (61) a. linguistics students \subseteq students
 b. (*presupposition of conclusion*, assumed true) Linguistics students ate kale.
 c. Only students ate vegetables. \rightarrow Only linguistics students ate kale.

Thus, Strawson-entailment holds for the scope, as in (60-c), but not for the restrictor, as in (61-c), patterning with NPI-licensing environments.¹³

¹³As Wagner (2005) moreover points out, further tests support the idea that *only* is downward monotone; see Wagner (2005) for further examples.

The crux of this argument for association with focus via movement is the fact that *only* licenses NPIs in its scope, but not its restrictor. Movement at LF of exclusively the focus phrase into the restrictor explains why NPIs may be licensed in one of the arguments of a verb phrase, as in (39), repeated for the reader here.

- (62) a. John **only** gave any kale [to *his* friends]_F.
 b. John **only** gave [*kale*]_F to any of his friends.

An in-situ theory of VP-‘only’—in which the entire VP is the syntactic ‘restrictor’—would not predict the licensing of an NPI in such cases; in contrast, movement in which one element of the VP moves to the syntactic restrictor, would.

If movement is at work, then movement constraints should hold. One such constraint is the island restriction. However, association within an adjunct island is possible, such as in the following examples:

- (63) Mary only gave a book to John [_{island} because [Bill]_F gave a book to him].

If a movement analysis is correct, it is problematic that the focused element must move out of the island to be the complement to the focus particle. Thus, in such cases the entire island is analyzed as being pied-piped at LF into the complement position of *only*—now, the entire island is in the syntactic restrictor. The prediction then is that NPIs will not be licensed in the island, which the following examples illustrate.

- (64) a. *Mary only gave a book to John [_{island} because [Bill]_F gave any book to him].
 b. She only gave anything to anyone [_{island} because [you]_F did].

This provides a nice test for hypothesis 2 (covert/overt movement). Recall that in this hypothesis, pre-position *solo* and *soltanto* are analyzed as involving covert focus movement, whereas post-position *soltanto* appears after the focus phrase due to the same movement, albeit overt. Thus, results for NPI-licensing, in particular for island, should be identical! In order to test this, target sentences with *solo* and *soltanto* preceding an island will be compared to sentences with *soltanto* preceding the island. If results are identical across all conditions, the pre-position may be related to post-position via movement.

6.3 Intervention Effects

The intervention of certain quantifiers—though not all—has been argued to block LF movement of *wh*-in-situ. Intervention can be defined as such: “In a structure [X ... Z ... Y], Z intervenes between X and Y iff X c-commands Z and Z c-commands Y” (Adger 2002). An example of such intervention effects for German are found in (65-a), from Beck (1996) via Sauerland and Heck (2003); compare to (65-b), in which the *wh*-word has scrambled to a position before the negative quantifier *keinem*, ‘nobody.’ (The relevant *wh*-phrase is in italics, and the intervener in boldface.)

- (65) a. *Ich frage mich wer **keinem** *was* erklärt hat?
 I ask myself who nobody what explained has
 b. Ich frage mich wer *was* **keinem** *t_i* erklärt hat?
 I ask myself who what nobody explained has

The fact that the intervention effect disappears when the *wh*-word scrambles overtly to a position before the negative quantifier suggests that this is a problem at LF with covert movement. Thus, the generalization for intervention effects is as so (t_i^{LF} represents the trace from covert LF-movement) (Kim (2002), citing Beck (1996)):

- (66) * [... X_i ... [INTERVENER ... [... t_i^{LF} ...]]]

A brief note on negative expressions in Italian: negative expressions, such as, for example, *nessuno* ‘nobody,’ can appear both with or without the second negative marker *non* ‘not.’ Compare sentence (67-a) with sentence (67-b).

- (67) a. **Nessuno** ha telefonato.
 nobody has called
Nobody called.
- b. Gianni **non** ha dato il libro a **nessuno**.
 G. not has given the book to no one.
G. did not give the book to anyone.

In (67-a), only one negative expression is present, whereas in (67-b) there are two negative expressions, a construction sometimes referred to as negative concord.¹⁴ Negative concord is common for constructions in which a negative operator appears before the verb together with a negative quantifier in the VP.¹⁵ As I am interested in intervention effects between the direct and indirect object in the VP, all sentences will be examples with negative concord, i.e., *non* + EFP + *niente/nessuno* + FOCUS.

The primary question here is: Are there intervention effects with non-contiguous association with focus? If yes, it would provide further support for a covert focus movement analysis, i.e., that association with focus involves LF movement.

7 Experiment: Syntax

The main objectives of the tests presented here are to answer the following questions:

- i) Do all three conditions allow non-contiguous association with focus?
- ii) Do the EFPs license Negative Polarity Items (NPIs) in their scope? In their restrictor? Is it possible for the EFPs to associate with focus within an island? Are NPIs also licensed within such islands?
- iii) Finally, if non-contiguous association is possible, are there intervention effects when a negative quantifier intervenes between the EFP and the focus?

7.1 Participants

In total there were 24 participants in the experiment, about half of which also participated in the first experiment. Again, participants were native Italian speakers, all of whom grew up within 20 kilometers of Florence, Italy. None reported having learned another language as a child, and in terms of their native language, participants in the experiment were uniform.

However, when it came to non-native languages, the participants varied greatly. All except one spoke at least one foreign language, and many of them spoke several foreign languages (at most, 6) with varying degrees of fluency. The foreign languages spoken by the participants include English, German, Swedish, Spanish, French, Portuguese, and Catalan; fluency ranged from beginner to advanced.

¹⁴The analysis of (67-b) is controversial. In Zeijstra (2004), *nessuno* is analyzed as being a non-negative existential quantifier in concordance with the negative marker *non*; van der Wouden and Zwarts (1992) argue that in (67-b) *non* and *nessuno* are engaged in cumulative negation, i.e., the negative feature is spread across various elements; similarly, Acquaviva (1996) refers to a negation operator-chain, in which two functional heads share the same [+ negative] feature but is interpreted as a single semantic operator.

¹⁵But not only, as in the following sentence, in which the subject appears to the right of the verb, with a meaning more or less synonymous to (67-a):

- (i) Non ha telefonato nessuno.
 not has called nobody
Nobody called.

The age range fell between 23–59 years old, with the average age of participants being 33. In all, 8 men and 16 women participated.

7.2 Materials and Design

In order to get an overview of the syntax of *solo* and *soltanto*, 3 tests across 3 questionnaires were conducted (for an overview of the tests, conditions, and number of item sets for the tests discussed here, see Table 15).¹⁶ As in the first experiment, there were three conditions for manipulation: PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO.

All tests can be further broken down into subtests. As an illustrative example, the test for NPI-licensing in the scope can be further broken down into two subtests: i) licensing the NPI *mai* ‘ever’ in the scope, and ii) licensing the NPI *alzare un dito*, idiomatic, ‘help’ (literally ‘lift a finger’) in the scope. For example, since these subtests had 2 item sets, the total number of target sentences for this test (NPI-licensing in the scope) is 12 (that is, 3 conditions x 2 subtests (*mai* and *alzare un dito*) x 2 items sets each = 12 target sentences).

The reason for the low number of item sets was to keep the questionnaire at a reasonable length given the number of tests conducted in the second questionnaire. The lack of item sets and lexical variety for the various structures may decrease the certainty of the results, but the wide range of data provided a broader overview of the syntax of *solo* and *soltanto*. Futures study—I hope—will eventually expand on some of the data provided here.

For illustrative purposes, an example of one item set with all three conditions is found in (68).

- (68) *(contesto)* Sara è la ragazza di Giovanni, ma in realtà è innamorata di Davide. Dopo una corsa molto lunga a cui hanno partecipato tutti e due, la vedono esultare. Giovanni pensa che lei abbia esultato perché lui ha raggiunto il traguardo, ma . . .
S. is the girlfriend of G., but in reality she is in love with D. After a long run in which both participated, they saw her cheering. G. thinks that she is cheering because he reached the finish line, but . . .
- Sara ha esultato **solo** [_{island} perché [Davide]_F ha raggiunto il traguardo].
 - Sara ha esultato **soltanto** [_{island} perché [Davide]_F ha raggiunto il traguardo].
 - Sara ha esultato [_{island} perché [Davide]_F ha raggiunto il traguardo] **soltanto** *t*.
- TRANSLATION: *S. cheered only because D. reached the finish line.*

In this example, pre-position *solo* and *soltanto* appear before the island, and post-position *soltanto*—positing that the island is overtly pied-piped into its restrictor—appears after the island. Note that in the questionnaire itself, no meta-linguistic markers were included with the target sentences, meaning participants did not see a trace, a subscripted F or any constituent marking. Association with focus was established by the context only.

The three conditions in each item set were distributed across the three questionnaires in a latin square design, so that when, for example, PRE-SOLO appeared for one item set in Questionnaire 1, Questionnaire 2 would have the same sentence but with PRE-SOLTANTO, and so on. (See Table 2 in Subsection 3.2 as a visual representation of the latin square distribution.) Thus, across the three

¹⁶In actuality, there were 5 tests in total, including various subtests, but for the following reasons not all tests and their results will be discussed.

- Complex DPs: For the sake of space, the results for association with complex DPs (adjectival modifiers, PP modifiers, relative clauses) will not be discussed. Briefly, results suggest that for all three conditions association with DPs modified by pre- and post-nominal adjectives as well as PPs were mostly judged as well-formed, whereas POST-SOLTANTO for relative clauses was questionable. The results for relative clauses will be mentioned in the discussion on NPI-Licensing in the restrictor of the EFP.
- Coordinate Focus: The results for multi foci in coordinate structures were not included because the data is inconclusive given a faulty design in the target sentences.

Table 15: A summary of the tests for which the results will be presented here. The three conditions are PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO.

<i>Test</i>	<i># of Conditions</i>	<i># of Item Sets (including subtests)</i>	<i>Total Targets</i>
1. Non-Contiguous Association	3	6	18
2. NPI Licensing			
2.1. Association within an Island	3	4	12
2.2 NPI-Licensing: Scope	3	4	12
2.3 NPI-Licensing: Restrictor	3	4	12
2.4 NPI Licensing: EFP outside island	3	2	6
3. Intervention Effects	3	4	12
	<i>Total</i>	<i>24</i>	<i>72</i>

questionnaires, the same sentence was able to be presented for all three conditions without repetition for any individual participant.

There were 24 participants, so each questionnaire was completed by 8 people. Furthermore, in order to minimize effects of the ordering of the questions, each questionnaire was administered both forward and in reverse, divided evenly among the participants: to be explicit, this means that questionnaire 1 was completed by 4 participants in one direction, and by 4 participants in the reverse direction, and so on for Questionnaire 2 and Questionnaire 3.

Again, participants were sent a link via e-mail to a questionnaire to be completed online. There was no time limit, and no control of the environment in which they completed the questionnaire. Nonetheless, in the instructions participants were requested to concentrate on the task at hand and not multitask while providing their judgments.

For each questionnaire, there were 100 sentences presented, with 50 planned target sentences (the results here will not be presented for all targets for all tests—see footnote 16 for more) and—at a 1:1 target-filler ratio—50 filler sentences. Again, ideally there would have been a higher target-filler ratio in order to test the same structure with more lexical items, but given the high number of targets for this questionnaire, I made the decision to have a 1:1 target-filler ratio. Pursuing a 1:2 target-filler ratio, as for the first questionnaire, would have meant either reducing the targets or having up to 150 sentences for participants to judge, most likely totaling over 1.5 hours. The risk of fatigue or loss of interest was judged to be too great for a high target-filler ratio. To take stock:

- There were three conditions, PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO, which were distributed across the three questionnaires in a latin square design;
- there were 3 tests, each of which may be broken down into more specific subtests;
- for each subtest, there were 2 item sets, and each item set consisted of the same sentence repeated three times, differing only in the exclusive focus particle (i.e., PRE-SOLO, PRE-SOLTANTO, and POST-SOLTANTO).

Lexical Items Again, no lexical items were repeated for all target sentences; however, out of necessity, functional words such as articles and auxiliary verbs were repeated. For this experiment, however, the target sentences did not have an entirely consistent structure, as necessitated by the need for various syntactic constructions. However, there were some guidelines used in the preparation of the target sentences:

- for sentences with only a direct object, the structure was SUBJECT + AUXILIARY + LEXICAL VERB + DIRECT OBJECT;

- for sentences with a direct and indirect object, the structure was SUBJECT + AUXILIARY + LEXICAL VERB + DIRECT OBJECT + INDIRECT OBJECT.
- Common nouns were always a DP consisting of a definite article followed by a noun.
- For the auxiliary verbs the indicative mood was used (i.e., for the verb *avere* ‘have,’ the forms *ha*, ‘has’ and *hanno*, ‘have’ are in the indicative singular and indicative plural, respectively). (For a brief discussion on the syntax of auxiliary verbs in Italian, please see Subsection 3.2.)
- The LEXICAL VERB was always a past participle.

All VPs had either i) a DIRECT OBJECT, or ii) a DIRECT OBJECT (DO) and an INDIRECT OBJECT (IO). Although the order of the DO and IO is relatively free, the unmarked word order for the VP was assumed to be [V [DO [IO]]]. This was settled upon after asking a few native speakers in personal correspondence which argument order sounded most natural in response to the out-of-the-blue question *Cos’è successo?* ‘What happened?’ Moreover, it should be noted that for verbs with two objects, there is no ditransitive structure (i.e., without the prepositional phrase for the indirect object) as in English—for the indirect object, it is necessary to include the preposition *a* ‘to’ at all times.

Again, I will proceed by presenting each test, and their results, in turn.

8 Results: Syntax

8.1 Non-Contiguous Association with Focus

In order to investigate non-contiguous association with focus, the following positions for the focus particles *solo* and *soltanto* were identified: for PRE-SOLO and PRE-SOLTANTO i) pre-*v*P and ii) pre-VP, and for POST-SOLTANTO iii) post-*v*P/VP. Note that I am assuming $V \rightarrow v$ movement for active transitive verbs assigning accusative case, and thus the past participle of the lexical verb is assumed to be in the little-*v* head. All verbs in this test had two arguments: a DIRECT OBJECT and an INDIRECT OBJECT.

- With PRE-SOLO and PRE-SOLTANTO before the *v*P, one degree of separation means association with the DO, i.e., [**EFP** [_{*v*P} VERB [DO]_F IO]].
- With PRE-SOLO and PRE-SOLTANTO before the VP, one degree of separation means association with the IO, i.e., [_{*v*P} VERB [**EFP** [_{VP} DP [IO]_F]]].
- With PRE-SOLO and PRE-SOLTANTO before the *v*P, two degrees of separation means association with the IO, i.e., [**EFP** [_{*v*P} VERB DO [IO]_F]].
- With POST-SOLTANTO after the *v*P/VP—it is not possible to determine at which level the EFP is attached to in this position—one degree of separation means association with the DO, i.e., [[_{*v*P/VP} [DO]_F IO] **EFP**].
- With POST-SOLTANTO after the *v*P/VP—it is not possible to determine which level the EFP is attached to in this position, although, if association is possible with the verb (given $V \rightarrow v$ movement) it would be assumed to be at *v*P or higher for reasons of c-command—two degrees of separation means association with the verb, i.e., [[_{*v*P} [VERB]_F DO IO] **EFP**].
- Since for the pre-position *solo/soltanto* there were two different surface positions (i.e., pre-*v*P puts the EFP before the verb, and pre-VP puts the EFP before the direct object), where for POST-SOLTANTO there was only one corresponding position (both post-*v*P and post-VP will put *soltanto* after the indirect object), there would have been twice the data for post-*v*P/VP position than for the corresponding pre-*v*P or pre-VP position. Therefore, instead of having more data for

one condition, there was one additional manipulation which was not motivated by hierarchical syntactic structure—*soltanto* was put in between the DO and IO, which presumably would put the EFP at a V' position—with one degree of separation, i.e., [v_P [VERB]_F DO EFP IO]. Given its (presumable) position at V', this is predicted to be illicit, as the focus particle cannot c-command the focused verb higher in the structure.

Target sentences were designed so that for each condition the same sentence was used. Consider the following context and target sentences, in which the same focus was possible with all three conditions:

(69) (*contesto*) Tommaso ha chiesto a Giovanni di prestargli il libro e gli appunti per l'esame di matematica, ma ...

T. asked G. to lend him the book and the class notes for the math exam, but ...

- a. Giovanni ha **solo** prestato [il libro]_F a Tommaso.
- b. Giovanni ha **soltanto** prestato [il libro]_F a Tommaso.
- c. Giovanni ha prestato [il libro]_F a Tommaso **soltanto**.

INTENDED: *G. only lent the BOOK to T.*

(Note that no judgments as to the acceptability of these sentences are marked here—the details of the judgments will be presented below.) Since in this case it was possible to construct for all conditions an association with focus with the DO with one element intervening on both sides, the same focus phrase and the same context were able to be used. However, for some manipulations it was not possible to have the same focus for all three conditions; in this case, the same target sentence—but with different foci—was used. For example, consider PRE-SOLO and PRE-SOLTANTO with two degrees of association (i.e., with the IO), and POST-SOLTANTO with two degrees of association (with the lexical verb), as shown below:

(70) (*contesto*) Giuseppina e Susanna volevano che Filippo comprasse loro una cartolina da Firenze, ma ...

G. and S. wanted F. to buy them a postcard from Florence, but ...

- a. Filippo ha **solo** comprato la cartolina a [Susanna]_F.
- b. Filippo ha **soltanto** comprato la cartolina a [Susanna]_F.

INTENDED: *F. only bought the postcard for SUSANNA*

(71) (*contesto*) Susanna voleva che Filippo le comprasse e spedisse una cartolina da Firenze, ma ...

S. wanted F. to buy and send her a postcard from Florence, but ...

- a. Filippo ha [comprato]_F la cartolina a Susanna **soltanto**.

INTENDED: *F. only BOUGHT the postcard for S.*

Therefore, in this item set, although the target sentences—minus the focus particle—were lexically the same, the foci (as determined by the context) and, of course, the focus particle were different.

The results for pre-position *solo/soltanto* are found in Table 16, and the results for post-position *soltanto* are found in Table 17. In the tables, the highest percentage of responses is indicated in boldface.

Table 16: Non-Contiguous AwF: PRE-SOLO and PRE-SOLTANTO (Scale: 1 'Unacceptable' – 9 'Acceptable')

	<i>pre-solo</i>			<i>pre-soltanto</i>		
	1-3	4-6	7-9	1-3	4-6	7-9
1-Degree: <i>vP</i>	31.3% (5/16)	6.3% (1/16)	62.5% (10/16)	6.3% (1/16)	50% (8/16)	43.8% (7/16)
2-Degree: <i>vP</i>	31.3% (5/16)	12.5% (2/16)	56.3% (9/16)	12.5% (2/16)	37.5% (6/16)	50% (8/16)
1-Degree: <i>VP</i>	12.5% (2/16)	18.8% (3/16)	68.8% (11/16)	0% (0/16)	12.5% (2/16)	87.5% (14/16)

I will start with the results for the pre-position EFPs. For PRE-SOLO, all conditions had a majority of responses in the 7–9 (*‘acceptable’*) range. However, the pre-*vP* position showed some increase in negative responses for both 1- and 2-degrees of association, with ca. 31% negative responses in the 1–3 range for both, but very few responses in the 4–6 range. The pre-VP position similarly had an overall higher number of responses in the 7–9 range (ca. 69%), with any other response being somewhat evenly distributed in the 1–3 and 4–6 range.

For PRE-SOLTANTO, the highest frequency of responses for pre-*vP* position with 1-degree of separation was in the 4–6 range at 50%, and the second highest was 7–9 at ca. 44%. The highest number of responses for pre-*vP* position with 2-degrees of separation was in the 7–9 range at 50%, and the second highest was in the 4–6 range at ca. 38%. Note that responses in the 1–3 range were very low for both pre-*vP* and pre-VP. The pre-VP position showed the highest number of positive responses than any other, with ca. 88% of responses in the 7–9 range. Furthermore, in this position no responses were in the 1–3 range, and only ca. 13% were in the middle 4–6 range.

Table 17: Non-Contiguous AwF: POST-SOLTANTO (Scale: 1 *‘Unacceptable’* – 9 *‘Acceptable’*)

	<i>post-soltanto</i>		
	1-3	4-6	7-9
1-Degree: <i>vP/VP</i>	56.3% (9/16)	18.8% (3/16)	25% (4/16)
2-Degree: <i>vP/VP</i>	62.5% (10/16)	18.8% (3/16)	18.8% (3/16)
1-Degree: between DO/IO	81.3% (13/16)	12.5% (2/16)	6.3% (1/16)

POST-SOLTANTO, in contrast, showed a much higher number of negative responses in the 1–3 range than pre-position *solo/soltanto*: ca. 56% for 1-degree of separation, and ca. 63% for 2-degrees of separation. Responses were more or less evenly mixed for the 4–6 and 7–9 ranges. 1-degree of separation in a position between the DO and IO were very negative, at 81% in the 1–3 range.

8.2 NPI-Licensing

8.2.1 Association with Focus in Islands

In order to establish whether or not *solo* and *soltanto* can associate with focus in an island, two islands were tested: i) complex noun phrases (CNP), and ii) adjunct islands. That these are islands in Italian is demonstrated by the fact that *wh*-movement is not possible out of them, as in:

- (72) a. Giulia conosce la ragazza che ha baciato chi?
S. knows the girl that kissed who?
 b. *Chi conosce Serena la ragazza che ha baciato *t*?
- (73) a. Giulia ha chiamato l’amica perché Francesca ha baciato chi?
S. called her friend because F. kissed who?
 b. *Chi ha chiamato Serena l’amica perché Francesca ha baciato *t*?

Contexts were presented in which two alternatives were established, and the target had the EFP exclude one of them. Consider the following complex noun phrase island.

- (74) (*contesto*) Due fan di Jovanotti sono andate ad un suo concerto e hanno avuto la fortuna di incontrarlo. Una l’ha abbracciato, mentre l’altra l’ha baciato. Serena ha visto una di queste ragazze alla festa dopo il concerto.
Two fans of Jovanotti went to his concert and had the good luck to meet him. One hugged him, while the other kissed him. S. saw one of these girls at the party after the concert.
 a. Serena ha visto **solo** _[island] la ragazza che ha [abbracciato]_F Jovanotti].
 b. Serena ha visto **soltanto** _[island] la ragazza che ha [abbracciato]_F Jovanotti].

- c. Serena ha visto [_{island} la ragazza che ha [abbracciato]_F Jovanotti]_i **soltanto** *t_i*.
 INTENDED: *S. only saw the girl who HUGGED J.*

For POST-SOLTANTO, it is important to note that the structural position here is not possible to determine: it could be attached to the DIRECT OBJECT or the VP, the relative clause, etc. The overt movement assumption is that the EFP is adjoined above the island, and the island is moved into the restrictor, as indicated by the trace—such an analysis is not yet supported, and the meta-linguistic markers are only included to remind the reader of the motivation for having *soltanto* in a position following the relative clause. Establishing where POST-SOLTANTO is will be left to the discussion, after the results have been presented.

For each island, two item sets were tested. The results are in Table 18.

Table 18: Association with focus in islands for all three conditions (Scale: 1 ‘Unacceptable’ – 9 ‘Acceptable’)

	CNP Island			Adjunct Islands		
	1–3	4–6	7–9	1–3	4–6	7–9
<i>pre-solo</i>	6.3% (1/16)	18.8% (3/16)	75% (12/16)	0% (0/16)	25% (4/16)	75% (12/16)
<i>pre-soltanto</i>	6.3% (1/16)	18.8% (3/16)	75% (12/16)	6.3% (1/16)	25% (4/16)	68.8% (11/16)
<i>post-soltanto</i>	62.5% (10/16)	18.8% (3/16)	18.8% (3/16)	56.3% (9/16)	25% (4/16)	18.8% (3/16)

PRE-SOLO and PRE-SOLTANTO had 75% responses in the range 7–9 for association within a CNP island; similarly, for adjunct islands, PRE-SOLO had 75% responses in 7–9 range, and PRE-SOLTANTO had ca. 69% responses in the 7–9 range. Responses in the 4–6 range were few, and the 1–3 range seldom.

In contrast, POST-SOLTANTO had ca. 63% negative responses in 1–3 range for CNP islands, and ca. 56% in adjunct islands. Moreover, responses in the 4–6 range and 7–9 range were more mixed in both.

8.2.2 NPI-Licensing

The NPI *mai* ‘ever’ and the NPI *alzare un dito*, idiomatic under negation meaning ‘help’ (literally, ‘lift a finger’), were tested in the scope and syntactic restrictor. As an example, consider the following sentence for *alzare un dito*: in (75), the NPI is in the scope, and in (76) the NPI is in the restrictor; in both examples, the syntactic restrictor is underlined and the NPI is in italics..

- (75) (*scope*) Maria mi ha detto che quasi nessuno l’ha aiutata a lavare i piatti dopo la cena.
M. told me that practically no one helped her wash the dishes after dinner.
- Solo** il tizio che ha scelto la musica *ha alzato un dito.*
 - Soltanto** il tizio che ha scelto la musica *ha alzato un dito.*
 - Il tizio che ha scelto la musica **soltanto** *ha alzato un dito.*
 INTENDED: *Only the guy who chose the music helped (literally, ‘lifted a finger’).*
- (76) (*restrictor*) Quasi nessuno dei giovani che erano alla festa voleva essere pagato.
Practically none of the teens who were at the party wanted to be paid.
- Solo** il ragazzo che ha alzato un dito *ha chiesto dei soldi.*
 - Soltanto** il ragazzo che ha alzato un dito *ha chiesto dei soldi.*
 - Il ragazzo che ha alzato un dito **soltanto** *ha chiesto dei soldi.*
 INTENDED: *Only the teen that helped (literally ‘lifted a finger’) asked for money.*

(Again, note that no judgments as to the acceptability of these sentences are marked here—the details of the judgments will be presented below.) It is necessary to mention that results for one test, association with complex DPs that had a relative clause—not presented here for reasons of space—POST-SOLTANTO

showed mostly negative responses, with some mixed positive responses; i.e., having *soltanto* follow a DP with a relative clause was questionable, if not borderline ungrammatical. Based on this, (75-c) and (76-c) may not be acceptable for reasons beyond the test here—e.g., it may be because POST-SOLTANTO is not acceptable in this position with the intended focus on the complex DP under any circumstance. Unfortunately, in order to test the NPI *alzare un dito* in the restrictor of the focus particle, it was necessary to have the relative clause as in (75-c) and (76-c).

Results for NPI-licensing in the scope are in Table 19 and the restrictor in Table 20.

Table 19: NPI-licensing in scope (Scale: 1 ‘Unacceptable’ – 9 ‘Acceptable’)

	<i>mai</i>			<i>alzare un dito</i>		
	1–3	4–6	7–9	1–3	4–6	7–9
<i>pre-solo</i>	87.5% (14/16)	12.5% (2/16)	0% (0/16)	0% (0/16)	18.8% (3/16)	81.3% (13/16)
<i>pre-soltanto</i>	75% (12/16)	6.3% (1/16)	18.8% (3/16)	6.3% (1/16)	6.3% (1/16)	87.5% (14/16)
<i>post-soltanto</i>	81.3% (13/16)	18.8% (3/16)	0% (0/16)	43.8% (7/16)	25% (4/16)	31.3% (5/16)

Table 20: NPI-licensing in syntactic restrictor (Scale: 1 ‘Unacceptable’ – 9 ‘Acceptable’)

	<i>mai</i>			<i>alzare un dito</i>		
	1–3	4–6	7–9	1–3	4–6	7–9
<i>pre-solo</i>	87.5% (14/16)	12.5% (2/16)	0% (0/16)	31.3% (5/16)	6.3% (1/16)	62.5% (10/16)
<i>pre-soltanto</i>	81.3% (13/16)	18.8% (3/16)	0% (0/16)	18.8% (3/16)	25% (4/16)	56.3% (9/16)
<i>post-soltanto</i>	87.5% (14/16)	6.3% (1/16)	6.3% (1/16)	56.3% (9/16)	18.8% (3/16)	25% (4/16)

The strong NPI *mai*, ‘ever’ was not licensed under any condition, as demonstrated by the predominantly negative responses. For this reason, any further tests for *mai* will not be presented, as the responses were equally negative—this includes tests for NPI-licensing in the CNP and adjunct island.¹⁷

The results for *alzare un dito* (NPI-reading, ‘help’) are more compelling. PRE-SOLO and PRE-SOLTANTO were mostly in the 7–9 range when the NPI was in the scope; furthermore, all other responses were in the middle 4–6 range, except one response which was in the negative 1–3 range. In contrast, the results were much more mixed when the NPI was in the restrictor. Both PRE-SOLO and PRE-SOLTANTO had mostly positive responses (ca. 63% and ca. 56% in the 7–9 range, respectively), but the number of unacceptable responses in the 1–3 range increased (ca. 31% and ca. 19%, respectively).

In contrast, POST-SOLTANTO had a majority of negative responses in the 1–3 range for both the scope (44%) and the restrictor (56%), with some responses in the 4–6 and 7–9 range. Again, this may very well be due to *soltanto* following the relative clause and not the NPI *per se*.

8.2.3 NPI-Licensing in Islands

In order to test whether NPIs were licensed in an island, participants were presented sentences with an island that had a focused phrase and an NPI either preceding or proceeding the island, as in the following example:

- (77) (contesto) Il babbo pensa che l’insegnante abbia chiamato la mamma perché Rina ha aiutato a scuola, ma
The dad thinks the teacher called the mom because R. helped at school, but ...
 a. L’insegnante ha chiamato la mamma **solo** [_{island} perché [Maurizio]_F ha alzato un dito].

¹⁷The apparent difference in acceptability between *mai* and *alzare un dito* in Italian may have to do with the differences between weak and strong NPIs, as discussed in Subsection 6.2.

- b. L'insegnante ha chiamato la mamma **soltanto** [_{island} perché [Maurizio]_F ha alzato un dito].
- c. L'insegnante ha chiamato la mamma [_{island} perché [Maurizio]_F ha alzato un dito]_i **soltanto** *t_i*.
 INTENDED *The teacher only called the mom because MAURIZIO helped (literally, 'lifted a finger')*.

Again, the exact position of POST-SOLTANTO is not clear, and the representation here is just one possible analysis, specifically the overt movement analysis. Nonetheless, if the EFP is adjoined to the island in a post-position, this would be where it would appear. Further discussion of the exact position of post-position *soltanto* will be left for the discussion. Moreover, note that sentences with the NPI *mai* were also tested in comparable sentences; however, as before, none of the sentences were acceptable, and the results will not be discussed further.

The results for NPI-licensing in islands is presented in Table 21.

Table 21: NPI-licensing in adjunct islands (Scale: 1 ‘Unacceptable’ – 9 ‘Acceptable’)

	<i>alzare un dito</i>		
	1–3	4–6	7–9
<i>pre-solo</i>	25% (4/16)	37.5% (6/16)	37.5% (6/16)
<i>pre-soltanto</i>	50% (8/16)	12.5% (2/16)	37.5% (6/16)
<i>post-soltanto</i>	75% (12/16)	25% (4/16)	0% (0/16)

Results for PRE-SOLO and PRE-SOLTANTO were mixed: for PRE-SOLO, there was no clear majority of responses, with the range 4–6 and 7–9 tied at ca. 38%; furthermore, results in the 1–3 range were close behind, at 25%. PRE-SOLTANTO had a higher number of negative responses, with 50% of all responses in the 1–3 range; however, the positive range at 7–9 was also relatively high, at ca. 38%. On the other hand, POST-SOLTANTO was less ambiguously dispreferred: 75% responses fell between 1–3, with the remaining 25% at 4–6.

8.3 Intervention Effects

To test intervention effects, participants were presented sentences in which a negative element *niente* intervened between the focus operator and the focus. As an illustrative example, consider the sentence in (78).

- (78) (contesto) Il postino ha consegnato qualcosa a quasi tutti i condomini.
The postal worker delivered something to practically everyone in the condominium.
- a. Il postino non ha consegnato **solo** niente [a Jacopo]_F.
- b. Il postino non ha consegnato **soltanto** niente [a Jacopo]_F.
- c. Il postino non ha consegnato niente [a Jacopo]_F **soltanto**.
 INTENDED: *The postal worker did not deliver anything to Jacopo only.*

Note that in preparing the target sentences, POST-SOLTANTO was not tested with an intervener between the EFP and the focus. This was done for the following reason: informally, in the preparation of the questionnaire one native-speaker commented that having anything at all come between POST-SOLTANTO and the focus was, in her opinion, unacceptable—as was tested, and supported, in Section 8.1.

I had decided to first look over the results of non-contiguous association with focus for post-position *soltanto*, and postpone testing this condition depending on those results. Given the primarily negative results for the POST-SOLTANTO condition with non-contiguous association with focus, there is no reason to test intervention effects here, as the responses are predicted to be primarily negative—not necessarily because of the negative quantifier intervener.

Nonetheless, sentences such as (78-c) were included for the sake of comparison, as it appeared to be the only condition in which the intended meaning was possible. For this test, PRE-SOLO and PRE-SOLTANTO were tested both before the *vP* (located before the verb) and the VP (located before the direct object). The POST-POSITION was always following the IO in sentence-final position. The results are in Table 22.

Table 22: Intervention Effects for PRE-SOLO and PRE-SOLTANTO before the *vP* and VP, and POST-SOLTANTO following the *vP*/VP. (Scale: 1 ‘Unacceptable’ – 9 ‘Acceptable’)

	pre- <i>vP</i>			pre-VP		
	1-3	4-6	7-9	1-3	4-6	7-9
<i>pre-solo</i>	81.3% (13/16)	12.5% (2/16)	6.3% (1/16)	87.5% (14/16)	12.5% (2/16)	0% (0/16)
<i>pre-soltanto</i>	87.5% (14/16)	12.5% (2/16)	0% (0/16)	68.8% (11/16)	25% (4/16)	6.3% (1/16)
	post- <i>vP</i> /VP—for same item sets above			post- <i>vP</i> /VP—for same item sets above		
<i>post-soltanto</i>	37.5% (6/16)	18.8% (3/16)	43.8% (7/16)	31.3% (5/16)	37.5% (6/16)	31.3% (5/16)

In the pre-*vP* position, responses in the negative range 1–3 were high for both PRE-SOLO and PRE-SOLTANTO, at ca. 81% and ca. 88%, respectively. In contrast, very few responses were in the middle 4–6 range (ca. 13% for both conditions), and only 1 response for PRE-SOLO was in the 7–9 range; PRE-SOLTANTO had no responses in the acceptable 7–9 range. A similar pattern was found for pre-VP position for both PRE-SOLO and PRE-SOLTANTO. The majority of responses were in the negative 1–3 range, with ca. 88% for PRE-SOLO and ca. 69% for PRE-SOLTANTO. For PRE-SOLTANTO in this position, furthermore, 25% of responses were in the middle 4–6 range, and only ca. 6% response was in the positive range 7–9. PRE-SOLO had a mere 13% in the middle 4–6 range, and no responses in the positive 7–9 range. In contrast, POST-SOLTANTO showed mixed results, with a pretty even distribution of responses across the scale.

9 Discussion: Syntax

9.1 Non-Contiguous Association with Focus

On overview of the results found for non-contiguous association with focus for the pre-position is found in Table 23.

Table 23: Results—Non-Contiguous association with focus for PRE-SOLO and PRE-SOLTANTO. NB ✓ means acceptable, and ? means questionable

	2 Degrees <i>pre-vP</i>	1 Degree <i>pre-vP</i>	1 Degree <i>pre-VP</i>
PRE-SOLO	?	✓/?	✓
PRE-SOLTANTO	?	✓/?	✓

The results here are organized left-to-right from questionable to acceptable. There was some difference in the results depending on whether the EFP in pre-*vP* (pre-verbal) position was separated from the focus by 2 degrees or by 1 degree, with the former overall less consistent in the acceptable responses than the latter. Given this inconsistency, pre-*vP* with 2 degrees of separation will be considered questionable, albeit not totally unacceptable.

In contrast, 1-degree of separation overall had higher positive responses, although some differences were found depending on whether the EFP appeared before the *vP* (pre-verbal position) or the VP (before the first object). The latter was generally more acceptable than the former; for example,

responses for PRE-SOLTANTO were very high (7–9 range at ca. 88%), but before the *vP* less so (7–9 range at ca. 44%). For PRE-SOLO, these same positions both had a similar frequency of responses (7–9 range at ca. 65% for both).

However, it is in the frequency of negative responses where the difference becomes clearer, with the number of negative responses higher in pre-*vP* position with 1 degree of separation in comparison to pre-VP with 1 degree of separation (i.e., 1–3 responses for PRE-SOLO at ca. 32% vs. ca. 13%, respectively; and ca. 6% vs. 0% for PRE-SOLTANTO). For the above reasons, 1 degree of separation in the pre-*vP* position will be regarded as questionably acceptable, whereas 1 degree of separation from the pre-VP position will be considered acceptable.

An overview for POST-SOLTANTO is found in Table 24, in which the opposite is found.

Table 24: Results—Non-Contiguous association with focus for POST-SOLTANTO. NB ? means questionable, and **X** means unacceptable

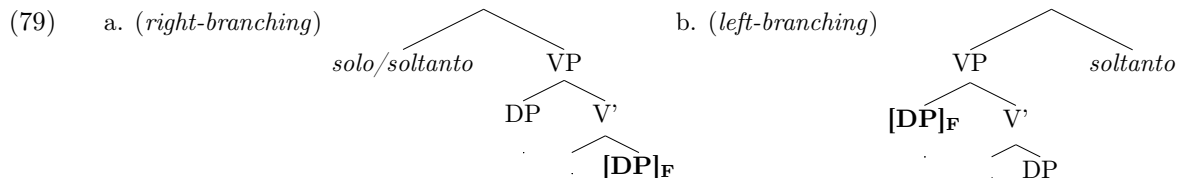
	1 Degree between DO/IO	2 Degrees post- <i>vP</i> /VP	1 Degree post- <i>vP</i> /VP
POST-SOLTANTO	X	X	X /?

Positioning *soltanto* between the DO and IO, with one degree of separation so that the focus is on the verb, elicited the highest number of negative responses (1–3 at 81%). The fact that the EFP was located at *V'* may have had an influence on the higher negative responses: the position is unambiguously low in the tree, and there is no way the focus particle could associate with something structurally higher up.¹⁸

For 2 degrees of separation, POST-SOLTANTO showed a high frequency of negative responses (1–3 at ca. 63%), with the other results mixed across the board. 1 degree of separation had a relatively high number of negative responses (1–3 at ca. 56%), but some more positive responses (7–9 at 25%), suggesting some improvement in this position. For this reason, I will consider post-position *soltanto* unacceptable with 2 degrees of separation in post-*vP*/VP position, but borderline unacceptable with 1 degree of separation in post-*vP*/VP position. Either way, POST-SOLTANTO generally did not elicit positive responses when not directly adjacent to the focus.

Thus, it is clear from these results that pre-position *solo/soltanto* are at a different structural position than their post-position counterpart. Assuming the EFP must c-command the focussed phrase, then PRE-SOLO and PRE-SOLTANTO must be higher in the tree than the constituent containing the focus for non-contiguous association with focus to be possible. In contrast, given the mostly negative responses, POST-SOLTANTO must not be at a node scoping over the larger constituent containing the focus.

Hypothesis 1: Right/Left Branching These results show that hypothesis 1 must be incorrect, as a left/right branching structure would have the same c-commanding relationship with the focus for both pre- and post-*soltanto*, which is clearly not the case. Consider the hypothetical structure below:

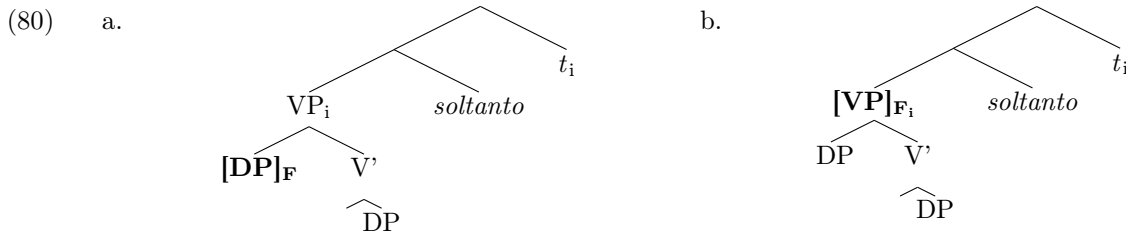


If non-contiguous association is possible in (a), then it should be possible in (b), for the syntactic relationship between the EFPs and VP is the same for all three conditions: at either side, the EFP

¹⁸In the final discussion I will suggest that POST-SOLTANTO can project up in focus projection, but even that would not be licit here, as it would be necessary to assume that the focus could project up over only part of the VP.

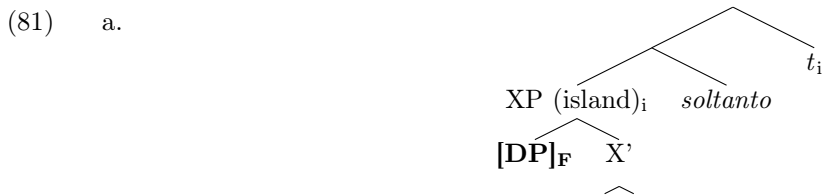
c-commands the VP and all the nodes therein.

Hypothesis 2: Covert/Overt Movement Hypothesis 2, the covert/overt analysis, is compatible with the results here, assuming only the focus moves into the restrictor—if that is the case, then there is no reason to assume that a non-focal element would appear between the focus and the EFP in post-position. Consider the following, in which the VP has moved into the restrictor, although in (a) only the DP object is in focus, whereas in (b) the entire VP is in focus.



In (a), only the higher DP (the direct object) is focus-marked, but the entire VP has moved into the restrictor of *soltanto*. Such a structure would be necessary for non-contiguous association with focus, in that non-focal material will now stand between the EFP and the focus; however, this pied-piping is not motivated, as the DO may otherwise move independent of the IO.¹⁹ On the other hand, should the entire VP be in focus, as shown in (b), then no non-focal material is in between the focus and *soltanto*.

Which situation in the covert/overt hypothesis would allow POST-SOLTANTO to associate with an element that is not adjacent to the EFP? Focus within islands. Consider the following, in which an island has pied-piped non-focal elements into the restrictor of *soltanto*:

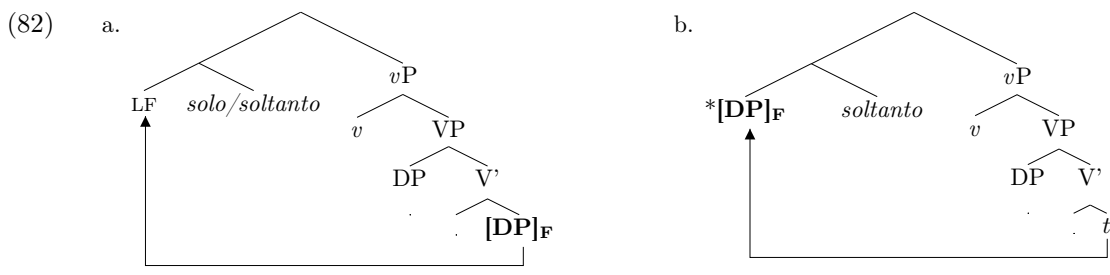


Here non-focal material has pied-piped with the focus into the restrictor. Since the focus cannot move out of the island on its own, it will drag the other non-focal elements into the restrictor for association with focus. This is the primary hypothesis to be tested in the next section, which will be discussed further there.

Problematic for the covert/overt hypothesis is that it would overgenerate possibilities. Covert movement is the assumed analysis for non-contiguous association with focus when the EFP is before the *vP*, as in (a)— which is acceptable, albeit somewhat questionable; e.g., ✓/? *Giovanni ha soltanto prestato [il libro]_F a Tommaso*, ‘G. only lent the BOOK to T.’ However, if overt movement into the restrictor of *soltanto* is postulated in this case, as in (b), it would produce a complete word salad in Italian.

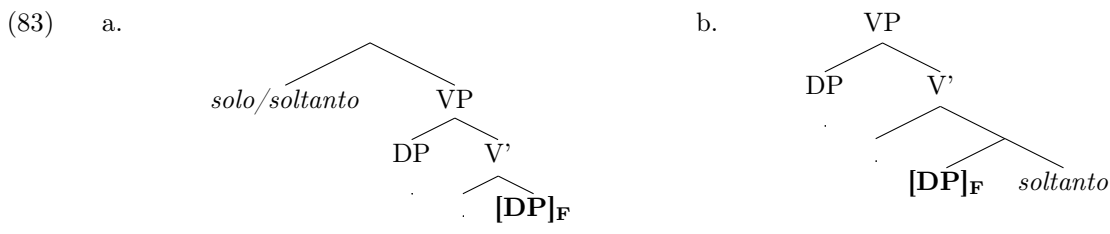
¹⁹Objects in Italian can move independently in this position, as illustrated in:

- (i) a. Maria ha dato [_{VP} il libro a Tommaso].
- b. Maria ha dato [_{VP} a Tommaso il libro].
- M. gave the book to T.



As a result, for the covert/overt hypothesis, one would need to postulate in this case specific restrictions preventing overt movement, while covert movement is the assumed analysis.

Hypothesis 3: Two Structural Positions Hypothesis 3 would fit the results here, as the preposition appears at a node higher in the tree, whereas post-position is on the focus itself. This predicts that pre-position EFP scopes over the focus, which may be contained in a larger phrase, resulting in non-focal material appearing between the EFP and the focus; see, for instance, (a) below. On the other hand, post-position *soltanto* will be adjoined much lower in the tree, specifically at the focus itself, which predicts i) it will not adjoin to non-focal material, and ii) it does not scope over the larger constituent for non-contiguous association with focus.



Whether or not movement is involved for association with focus in structure (a) will need to be determined on independent grounds—this is the goal of the following two tests. On the other hand, as *soltanto* adjoins directly on the DP in a strict syntactic relationship, there is no reason to assume movement would be necessary.

9.2 NPI-Licensing

9.2.1 Islands

An overview of the results for association with focus in islands is found in Table 25.

Table 25: CNP and Adjunct Islands. NB ✓ means acceptable, and ✗ means unacceptable

	<i>CNP</i>	<i>Adjuncts Island</i>
PRE-SOLO	✓	✓
PRE-SOLTANTO	✓	✓
POST-SOLTANTO	✗	✗

For pre-position *solo/soltanto*, responses were primarily in the acceptable (7–9) range; post-position *soltanto* was the opposite, with most responses in the negative (1–3) range. I conclude from this that—similar to the results for non-contiguous association with focus—the pre-position may c-command the island and the focus within, whereas the post-position cannot.

Hypothesis 1: Right/Left Branching The data would not support this hypothesis, as the EFP in pre- and post-position should have comparable scope effects, which is not the case.

Hypothesis 2: Covert/Overt Movement This hypothesis predicts that for pre-position *solo* and *soltanto* the entire island moves at LF into the restrictor of the EFP; similarly, for post-position *soltanto* this same movement is at work, albeit overt, putting POST-SOLTANTO after the island—thus, the results should be the same for pre- and post-position, which was not found.

Hypothesis 3: Two Structural Positions This hypothesis is compatible with this data. Pre-position *solo* and *soltanto* are higher up in the tree and scope over the island, and thus the focus within. Post-position *soltanto*, on the other hand, adjoins directly to the focus-marked argument, and will not adjoin to non-focal constituents, i.e., the non-focused island. Whether or not movement is involved for the pre-position EFPs is the goal of the remaining sections.

9.2.2 NPI-Licensing

An overview of the results for NPI-licensing in the scope, restrictor, and islands is found in Table 26.

Table 26: NPI-Licensing *alzare un dito*: Scope vs. Restrictor vs. Island. NB ✓ means acceptable, ? means questionable, and ✗ means unacceptable.

	<i>NPI in scope</i>	<i>NPI in restrictor</i>	<i>NPI in island</i>
PRE-SOLO	✓	?/✓	?
PRE-SOLTANTO	✓	?/✓	?
POST-SOLTANTO	?	?/✗	✗

NPI in Scope and Restrictor For NPI-licensing in the scope, responses for PRE-SOLO and PRE-SOLTANTO were primarily within the 7–9 range (at ca. 85%)—these conditions will be regarded as acceptable. In contrast, POST-SOLTANTO was mixed across the board; without a clear direction one way or the other, this condition will be regarded as questionable.

For NPI-licensing in the restrictor, acceptability decreased for PRE-SOLO and PRE-SOLTANTO; furthermore, unacceptability increased in both conditions. Nonetheless, more responses were positive than negative, and so I will regard these as borderline acceptable.

On the other end of the scale, POST-SOLTANTO, in contrast, had an increase of negative responses when the NPIs appeared in the restrictor, with a slight decrease in positive responses. Nonetheless, the results here are inconclusive. As discussed in Subsection 8.2.2, the unacceptability may have to do with *soltanto* appearing after a complex DP with a relative clause, and not with the presence of an NPI in the restrictor.

As a generalization, NPI-licensing is more acceptable (albeit only slightly) in the scope (where Strawson-downward-entailment holds) than the restrictor. This was predicted, as NPIs are known to be licensed in downward entailment environments. The next section will concentrate on whether or not association within an island is best analyzed as pied-piping the entire island into the restrictor. If this analysis holds, it is predicted that NPI-licensing should be comparable to the results for NPI-licensing in the restrictor, but not for the results for NPI-licensing in the scope.

NPI in Islands For PRE-SOLO and PRE-SOLTANTO, results were overall more similar to the results for NPI-licensing in the restrictor than the scope, suggesting the island is pied-piped into the restrictor (i.e., movement in Wagner (2005)’s analysis). However, results here were slightly less acceptable than results for NPIs in the restrictor. This may have to do with the fact that in order to have association with focus in an island, a complementizer had to come between the EFP and the focus—as was seen in non-contiguous association in Subsection 9.1, the more separation there was between the EFP and the focus, the more unacceptable the sentence became. Post-position *soltanto*, however, was overall unacceptable, which I regard as being due to the exclusive appearing on non-focal material (the island)—again, as was seen in both non-contiguous association with focus as well as association in islands, post-position *soltanto* is not acceptable when adjoining to non-focal arguments.

Hypothesis 1: Right/Left Branching This hypothesis is not tenable, as, again, the EFP is at the same structural position on either side of the island—the only difference being whether the tree is right- or left-branching—and so results should be the same for all conditions, which it is not.

Hypothesis 2: Covert/Overt Movement Also, the results here put the final nail in the coffin for Hypothesis 2, i.e., the idea that post-position *soltanto* is simply the result of overt focus movement, the same movement which is covert for pre-position *solo* and *soltanto*. If that were the case, the results for the three conditions would be predicted to be identical, as association with focus is achieved through the same movement process in all three positions. Thus, it can be concluded that POST-SOLTANTO is not related to PRE-SOLO and PRE-SOLTANTO by movement.

Hypothesis 3: Two Structural Positions This hypothesis, together with Wagner (2005)’s movement analysis for pre-position EFPs, could account for this data. Pre-position *solo* and *soltanto* are at a higher node in the tree, and association with focus in this position will involve covert movement into the syntactic restrictor. If the focus phrase is in an island, the entire island is pied-piped into the restrictor, which results in NPIs being less acceptable in the island—in comparison to the acceptable results for NPIs in the scope, this is what is found. Post-position *soltanto*, on the other hand, is located at a lower position in the tree, specifically on the focus itself. Thus, all results were negative, as it cannot adjoin to non-focal material in any case, in this case, the island.

9.3 Intervention Effects

An overview of the results for intervention effects with pre-position *solo/soltanto*.

Table 27: Intervention Effects: Pre-position *solo* and *soltanto*. NB ✕ means unacceptable.

	<i>pre-vP</i>	<i>pre-VP</i>
PRE-SOLO	✕	✕
PRE-SOLTANTO	✕	✕
	<i>post-vP/VP—no intervener</i>	
POST-SOLTANTO	?	

The goal here is determine whether or not there is further evidence for a covert LF movement analysis for the pre-position *solo* and *soltanto*. Indeed, there is! Intervention effects were found—a negative quantifier intervening between the EFP and the focus resulted in unacceptability. Thus, the results in this section provide more support for a movement analysis for pre-position *solo* and *soltanto*—however, this test, as it was conducted here, says nothing about post-position *soltanto*.

Note that in preparation of the questionnaire, the native-speaker who assisted me in checking the grammaticality of sentences (minus the focus particles) commented that in her opinion when any element came between POST-SOLTANTO and the focus, the sentence was unacceptable—borne out in the results discussed in 9.1. So, here no sentences with post-position *soltanto* were presented with an intervener between the EFP and the focus. If the results for non-contiguous association with focus demonstrated that POST-SOLTANTO could in fact be separated from its focus, a follow-up would have been conducted to see if intervention was also found. However, given the results for non-contiguous association with focus (see Table 27), a follow-up is not necessary.

The results here, together with the results for non-contiguous association with focus and NPI-licensing, provide a window into the syntax of *solo* and *soltanto*, suggesting that pre-position *solo* and *soltanto* are structurally in a different position than their post-position counterpart. The implications of this will be discussed in the conclusion.

Summary of Discussion To take stock of what was found here:

- Scope differences were found between pre- and post-position:
 - Non-contiguous association was possible for pre-position *solo* and *soltanto*, but not for post-position *soltanto*—post-position *soltanto* always appear adjacent to the focus-marked element.
 - Pre-position *solo* and *soltanto* may both associate with focus within an island, but post-position *soltanto* may not, as in that position it would be adjoined to non-focal material.
- Covert LF movement may account for pre-position *solo* and *soltanto*:
 - The NPI *alzare un dito* was generally more acceptable in the scope, where Strawson downward entailment holds, than in the restrictor.
 - For pre-position *solo* and *soltanto*, the NPI *alzare un dito* was questionable when association with focus was in an island, suggesting the entire island may be pied-piped into the syntactic restrictor of the exclusive.
 - Intervention effects were found for pre-position *solo* and *soltanto*, suggesting covert LF movement.
- In conclusion, the data does not support hypothesis 1 (right/left branching) or hypothesis 2 (covert/overt movement), but it does support hypothesis 3 (two structural positions).

10 Conclusion

Part I In this part, the semantics of the Italian focus particles *solo* and *soltanto* were explored. In that section, the following similarities were shown:

1. All three conditions were licit when referring to scales with partial-order.
2. PRE-SOLO and PRE-SOLTANTO were licit when referring to scales with pre-order; POST-SOLTANTO had some mixed results in this test, although the tendency was toward more positive responses than negative—more research is needed.
3. All three conditions were exhaustive.
4. For all three conditions, the prejacent is a presupposition, and the universal is an assertion; neither is conversational implicature.

Given these results, it appears that all three conditions are semantic synonyms, although more research is desired for POST-SOLTANTO in reference to pre-order scales.

Sufficiency modals is the one test in which clear differences emerged. Pre-position *solo* and *soltanto* allowed sufficiency readings, as did POST-SOLTANTO when proceeding the verb with verbal focus. In contrast, POST-SOLTANTO had questionable or dispreferred sufficiency readings. This variance can be reduced to scope differences, a syntactic phenomenon. That pre-position has different scope over the larger constituent containing the focus is supported in the results in Part II.

Part II This part concentrated on the syntax of *solo* and *soltanto*. Three hypotheses were proposed.

HYPOTHESIS 1: the left/right branching hypothesis, in which pre-position *solo/soltanto* and post-position *soltanto* are structurally identical, except the former is right branching, and the latter right/left branching.

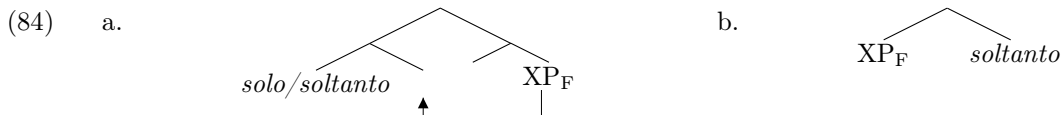
HYPOTHESIS 2: the covert/overt movement hypothesis, in which pre-position *solo/soltanto* involve covert focus movement, and post-position *soltanto* involves the same movement, albeit covertly, which results in the focus particle proceeding the focus.

HYPOTHESIS 3: the two structural positions hypothesis, in which pre-position *solo/soltanto* are at a higher structural position than their post-position counterpart.

The data in the second questionnaire does not support HYPOTHESIS 1 or HYPOTHESIS 2 for the following reasons.

- Non-contiguous association with focus showed that non-focal elements may appear between the EFP and the focus for pre-position *solo/soltanto*, but not for post-position *soltanto*. HYPOTHESIS 1 (right/left branching) would make the exact opposite prediction of what was found, given that the scope of the operator should be exactly the same whether in pre- or post-position. In this case, results should have been the same for all three conditions. Furthermore, although HYPOTHESIS 2 (covert/overt movement) might correctly predict that only the focus phrase will move into the restrictor of the EFP, leaving non-focal elements in place when possible (except for when pied-piping makes such movement necessary), this hypothesis runs into another problem: how to restrict overt movement when covert movement is the assumed analysis, e.g., when the EFP is in a pre-*v*P position, where overt movement would be a word salad.
- For all three conditions NPI-licensing was found to be worse in the restrictor relative to the scope. In islands, furthermore, NPI-licensing was questionable for pre-position *solo/soltanto*. For post-position *soltanto* NPI-licensing was ungrammatical. HYPOTHESIS 1 (right/left branching) would predict identical results in all three conditions, as the structural position for all three is the same. This was not borne out. Furthermore, these results contradict the predictions of HYPOTHESIS 2 (covert/overt movement), in which all three conditions should have identical results, since pre-positions is directly related to post-position by movement.
- For pre-position *solo/soltanto*, intervention effects were found for non-contiguous association with focus when a negative operator appeared between the EFP and the focussed phrase. (Given the results for non-contiguous association with focus, testing post-position *soltanto* would be redundant, as it is predicted that any non-focal element which intervenes between the focus and the post-position EFP will cause the sentence to be ill-formed.) The conclusions of this test are that movement is in fact involved for pre-position *solo/soltanto*.

I propose that HYPOTHESIS 3 (two structural positions) provides the best analysis which can account for the data. In this proposal, there are two structural positions for the pre-position and the post-position. Consider the following trees:



In (a), the pre-position for *solo* and *soltanto* is at a higher node in the tree than the focus, and association with focus involves covert LF movement of the focused phrase into the syntactic restrictor of the exclusive. As a result of this position in the tree, the negative component of the exclusive can scope over the modal, resulting in the sufficiency modal reading. Furthermore, since the EFP c-commands the entire phrase containing the focus, non-contiguous association with focus is possible. A movement analysis may account for the dispreferred licensing of the NPI *alzare un dito* in an adjunct island by assuming the entire island has pied-piped into the restrictor (Wagner 2005). Furthermore, intervention effects further support the claim that association occurs via covert movement in this position.

In (b), the post-position *soltanto* has adjoined directly to the focus phrase. I assume that the position of *soltanto* is at the deepest focus-marked element of the focus phrase. This seems like a reasonable assumption, given that *soltanto* appears only *after* the entire focused phrase, and never anywhere within the phrase. Furthermore, it is the deepest element which takes the pitch accent—similarly, *soltanto* in this position takes a different accentuation than in pre-position, perhaps suggesting it is at the focus-marking itself.

Furthermore, the fact that POST-SOLTANTO does not allow non-contiguous association with focus supports the idea that the focus particle is not at a structural position higher up in the tree than the larger constituent containing the focus. As a result, the scope of the focus particle will depend on

where the deepest focus-marking—and thus POST-SOLTANTO—is in the tree. Consider the difference in licensing sufficiency readings for post-position *soltanto* on the verb and the verbal phrase.

- (85) a. Per superare il corso, devi [_{vP} seguire]_F ✓**soltanto** il corso.
INTENDED: *To pass the class, you only have to attend the class.*
- b. Per riparare il tavolino, devi [_{vP} usare la colla]_F ***soltanto**.
INTENDED: *To repair the little table, you only have to use the glue.*

In (85-a), focus-marking on the verb means *soltanto* appears higher up in the tree, and the negative element of the EFP may scope over the modal; in contrast, in (85-b), *soltanto* appears at the deepest f-marked element, too low to scope over the modal. Thus, the data here supports an analysis in which two structures exist for pre- and post-position.

Final Conclusion Although the literature has a lot to say about the pre-position of focus particles—that is, when the focus particle is in a position preceding the element carrying the most prosodic prominence—there is surprisingly little literature on corresponding post-positions of said focus particles. The goal of this thesis was two-fold: to investigate 1) the semantics and 2) the syntax of the Italian focus particles *solo* and *soltanto*. The data and proposal here provides a point of departure for future research not only on the Italian focus particles *solo* and *soltanto*, but perhaps for other languages in which pre- and post-positions for focus particles exist.

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Eidesstattliche Erklärung

Ich, Joseph DeVeaugh-Geiss, erkläre, dass ich die vorliegende Bachelorarbeit selbständig und nur mit den angegebenen Hilfsmitteln angefertigt habe und, dass alle Stellen, die dem Wortlaut oder dem Sinne nach anderen Werken entnommen sind, durch die Angabe der Quellen als Entlehnungen kenntlich gemacht worden sind.

Berlin, den 13. September 2011
