

Internet Celebration for  
**Adriana Belletti 60<sup>th</sup> Birthday**

***Inquiries into Linguistic Theory and  
Language Acquisition.  
Papers offered to Adriana Belletti.***

Edited by  
Carla Contemori and Lena Dal Pozzo

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Carla Contemori & Lena Dal Pozzo (eds)  
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This e-book collects a number of contributions written in honour of Adriana Belletti. The contributors are some of Adriana's colleagues and former students representative of a wider community, who have been part of CISCL's inspiring community, either as students or visiting scholars.

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# Some questions (and some experimental answers) about Italian subjects: Subject positions in main and embedded questions in L1 and attrition\*

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In Italian, main questions introduced by wh-elements like *dove* ('where') disallow preverbal subjects, while main yes-no questions and wh-questions introduced by elements like *perché* ('why') allow preverbal subjects (Rizzi, 2001).

In this paper, we investigate the extent to which the availability of a pre-verbal subject in Italian interrogatives is modulated by the structure in which it is found (main vs. embedded) and the presence of different interrogative elements (*perché*, *dove*, yes/no operators). Our results show that the pattern observed for main questions is mirrored in embedded questions: when the discourse disallows a topic or narrow focus interpretation of the subject, pre-verbal subjects are preferred and rated more highly than post-verbal subjects in both yes-no and *perché*-questions. *Dove*-questions display the opposite pattern.

Capitalizing on Belletti's (2001) analysis of subject-inversion in declarative, we speculate that the licensing of subject-inversion in interrogatives is modulated by syntactic context. In questions that allow preverbal subjects, post-verbal subjects must be licensed under either a narrow focus or a topic interpretation, while this is not the case in questions that disallow preverbal subjects (e.g., *dove*-questions). To investigate whether, in addition to being influenced by the syntactic contexts in which they are found, the placement and interpretation of subjects in Italian interrogatives can be influenced by the syntactic properties of a competing grammar, we elicited acceptability judgments from native speakers of Italian who

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differ in terms of their English exposure and everyday use. We observe a selective of English pressure on main but not in embedded contexts. We speculate that the pressure exerted by the L2 more strongly impacts on discourse-related, rather than core syntactic properties.

*“La clef de toutes les sciences est sans contredit le point d’interrogation, nous devons la plupart des grandes découvertes au: Comment ? et la sagesse dans la vie consiste peut-être à se demander à tout propos: Pourquoi ? (Honoré De Balzac)”*

## 1. Introduction

In this paper, we present an experimental investigation of the distribution of subjects in different types of Italian interrogative structures.

Our main aim is to investigate the extent to which the distribution of subjects in Italian is influenced by the syntactic contexts in which subjects are found (i.e., root vs. embedded contexts, presence of different interrogative elements) and the properties of a dominant language system with competing syntactic properties.

We thus begin by providing an empirical investigation of the syntactic properties that affect the distribution of pre- and post-verbal subjects in different interrogative structures, and then informally discuss the informational import of post-verbal subjects in syntactic contexts in which the pre-verbal position is not available. After having established the empirical generalization, we investigate the extent to which the interplay between syntactic and informational properties can be affected by the properties of a competing L2 grammar (i.e., English).

Taken together, our experimental results show that the patterns described in the literature for Italian main questions are mirrored in embedded contexts (with indicative mood): interrogative elements like *dove* ‘where’ are incompatible with the occurrence of preverbal subjects, while *perché* (‘why’) shows the same pattern as *se* (‘if’): both can felicitously be followed by pre-verbal subjects.

We argue that the informational import associated with (non-right dislocated) post-verbal subjects in interrogative structures depends on the nature of the wh-element. When the preverbal subject position is structurally available, the post-verbal subject position is necessarily associated with a narrow focus import. This is the case for yes/no and *perché*-questions. For questions introduced by *dove*, post-verbal subjects in main contexts qualify as non-focal, while in embedded questions, their information structure import depends on the discourse context.

As can be seen, in Italian interrogative structures syntactic and the informational properties interact together in complex ways. This makes these structures a good test case for examining how syntax/discourse interface properties are affected in native speakers in potential L1-attribution (e.g., Montrul, 2004; Sorace, 2004; Tsimpli et al., 2004) by the pressure of a dominant L2 grammar (e.g., English) where subjects consistently appear after an inflected verb in main questions, but never do so in embedded contexts, regardless of information structure.

In our investigation, we used a forced choice paradigm to investigate whether Italian native speakers’ preference for a pre- vs. post-verbal subject in interrogative

structures changes as a function of syntactic structure (root vs. embedded, yes-no vs. *perché* vs. *dove*) and protracted English exposure.

To foreshadow the critical results, we found that in main interrogative structures, speakers in potential L1-attrition exhibit a stronger preference for post-verbal subjects in yes-no and *perché*-questions as compared to monolingual speakers, while no difference was observed for *dove*-questions. In contrast, in embedded questions, no asymmetry between the two groups was observed: they similarly preferred post-verbal subjects with *dove*-questions, and preverbal subjects with *perché* and yes-no questions.

Our results thus suggest that the L2 can selectively affect the L1. In main questions, speakers in potential L1 attrition appear to be in the process of shifting their preferences towards a word-order that more closely mirrors that of their dominant L2, but that is also permissible in their L1, albeit with a specific information structure value. In contrast, no effect of the L2 is found in embedded questions, where mirroring the English order would require placing the subject in a preverbal position in *dove* questions – an option that is not made readily available by the syntax of Italian. These results can be accounted for under the hypothesis that discourse-related properties, but not the core syntax, are affected under L2 pressure (see Tsimpli et al., 2004, 2007 and much related work).

## **2. Background and Experimental Prospectus**

### *2.1. Subjects and wh-questions in Italian*

The distribution of subjects in *wh*-questions is a long standing issue in the literature on the syntax of Italian (Rizzi 1996; Poletto 2000; Cardinaletti 2007; among many others), and Romance languages in general (Torrego 1984; Barbosa 2001; Zubizarreta 2001, among others).

Although not unanimously, it is generally assumed that the basic word order of Romance languages is *SVO*. Nonetheless, the availability of the pre-verbal subject position is strikingly restricted in main *wh*-questions. In many cases, the occurrence of a subject between the *wh*-element and the main verb (or between an auxiliary and the lexical verb) leads to ungrammaticality. Consider the Italian examples in (1): the subject may appear postverbally (1d) or in a high left-peripheral (clitic left dislocated) position (1c), but it cannot surface between the *wh*-element (1a) and the verb, or between the inflection and the lexical verb (1b).

- (1) a. \**Dove Gianni dorme?*  
      where John sleep-III-sg  
      ‘Where does John sleep?’  
      b. \**Dove ha Gianni dormito?*  
      where AUX John slept  
      ‘Where did John sleep?’  
      c. *Gianni dove dorme?*  
      John where sleep-III-sg  
      ‘Where does John sleep?’

- d. Dove dorme Gianni?  
 where sleep-III-sg John  
 ‘Where does John sleep?’

The restriction against pre-verbal subjects in wh-questions is not indiscriminate. Following Rizzi (2001; 2006) and related work, we can identify two classes of wh-elements that differ from each other with respect to the distribution of subjects. Pre-verbal subjects are disallowed with wh-elements that belong to the first class, e.g., bare (mono-morphemic) wh-elements (corresponding to complements or adjuncts like *cosa* ‘what’, *quando* ‘when’, *dove* ‘where’, etc.), but are allowed with wh-elements belonging to the second class, e.g., *perché* (‘why’) and *come mai* (‘how come’), as can be seen in (2). At least to some extent, D-linked and lexically restricted wh-elements also belong to this second class, as shown in (3).

- (2) Perché Gianni dorme?  
 why Gianni sleep-III-sg  
 ‘Why is Gianni sleeping?’
- (3) Chi di voi Gianni ha contattato per primo?  
 who of you Gianni AUX contacted for first  
 ‘Which one of you did Gianni contact first?’

While all the analyses proposed in the literature agree with the empirical characterization of the phenomenon, they diverge considerably on how the ban against preverbal subjects in questions headed by wh-elements of the first class should be accounted for. For example, Rizzi (1996; 2001; 2006) proposes that the ban against preverbal subjects results from the occurrence I-to-C movement. Under this analysis, all wh-elements are hosted in the CP system, but do not target the same position. The wh-elements that require verb adjacency are hosted in the focus projection (FocP) in main questions and in a lower projection (WhP) in indirect questions. With this class of elements, the T head bears a Q-feature, and is required to establish a local configuration with the wh-element in CP by the Q/Wh-Criterion: T must thus move via head-movement (Rizzi 1996) or phrasal-movement (Rizzi 2006) to the C-system; this movement prevents subjects from intervening between the wh-element and the inflected verb. Elements that do not require inversion, like *perché*, are generated in a higher position in the C-system (i.e., IntP, the same position that hosts *se* ‘whether’ in indirect yes-no question). Since the Int head is assumed to be intrinsically endowed with a Q feature, I-to-C does not take place; preverbal subjects are thus allowed in these structures.

A different line of analysis proposes that in Romance questions operators target Spec-TP rather than a projection in the CP system (Vallduví 1992; Dobrovie-Sorin 1994; Zubizarreta 1998). Barbosa (2001), in particular, argues that in Romance null subject languages, (non-focused) pre-verbal subjects are always clitic left dislocated and target a position higher than Spec-TP. Accordingly, subjects cannot intervene between

wh-elements and the inflection since they are structurally higher than TP, where wh-elements are hosted.

Cardinaletti (2006) rejects both of these accounts and argues, on the one hand, that I-to-C does not take place in Romance questions and, on the other, that wh-elements are hosted in CP, while preverbal subjects are hosted in a lower SubjP position in the IP field. According to this analysis, the ban against pre-verbal subjects in wh-questions is to be conceived of as a selective intervention effect that rules out subjects in Spec-SubjP in wh-questions (see also Zubizarreta, 2001 for a different analysis in terms of intervention).

For the main aim of this paper nothing crucial hinges on the adoption of a specific analysis, since all of them agree on the empirical characterization: preverbal subjects cannot precede the inflection with the first class of wh-elements, while they can with the second. Notably the competing analyses largely rely on different assumptions concerning related syntactic aspects (e.g. the occurrence of I-to-C movement, the status of preverbal subjects in Romance, etc.). These issues have been discussed at length, but less attention has been devoted to providing a more fine grained characterization of how subject placement in wh-questions is affected by different syntactic contexts (e.g., root vs. embedded), which is at the same time firmly grounded in the current syntactic literature and informed solid experimental results.

For example, unlike English, Romance languages do not seem to display a clear asymmetry between main questions and indirect questions: the same wh-elements that require adjacency in main questions tend to require adjacency in indirect questions. It has in fact been reported that with the first class of wh-elements the occurrence of an intervening preverbal subject in embedded questions leads to clear ungrammaticality in Spanish (Torrego 1984), Catalan (Solà 1992), and Rumanian (Soare 2009). While several authors (Rizzi 1996, Guasti 1996, Poletto 2001, among others) have argued that this also holds true in Italian, the degradation seems to be generally less severe. One of the aim of the present paper is to empirically validate this intuition.

## *2.2. Free subject inversion and subject inversion in wh-questions*

As sketched out in the previous section, in questions that require verb-adjacency, subjects can surface post-verbally (cf. 1.d). As is well-known, however, subjects in Italian can be licensed in a post-verbal position independently of the occurrence of an interrogative operator. This property is often referred as “free subject inversion”, where “free” indicates that subjects can occur post-verbally in the absence of a trigger (e.g., a wh-element). As Belletti (2001, 2004) shows, only in this sense can subject inversion be considered “free” in Italian, since it is linked to changes in information structure.<sup>1</sup>

Given this, to what extent are post-verbal subject in wh-questions that require verb-adjacency akin to “free” inverted subject in declarative sentences? Before addressing

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<sup>1</sup> For the sake of simplicity, we leave aside the cases of subject inversion with unaccusative verbs (cf. Belletti 1988 and related work) that are not immediately pertinent for the current discussion.

this question, we briefly discuss the status of post-verbal subjects in Italian, capitalizing on the analysis proposed by Belletti (2001, 2004).

In Italian declarative sentences, subjects typically surface in a post-verbal position when they express narrow focus, as in answers to subject wh-questions (Belletti, 2009). For instance, in the context of (4a), the subject can felicitously occur only postverbally, as shown by the inappropriateness of (4c).

- (4) a. Chi ha telefonato?  
 Who AUX called?  
 ‘Who called?’
- b. Ha telefonato Gianni.  
 AUX called John  
 ‘John called’
- c. #Gianni ha telefonato.  
 John AUX called  
 ‘John called’

In her seminal analysis, Belletti (2001, 2004) proposed that the low area of IP hosts a “low periphery”, populated by functional projections dedicated to express discourse-related properties: an IP-internal focus projection surrounded by topics projections. According to this analysis, in a sentence like (4)b, a null pronominal *pro* is inserted in the preverbal subjection position, while the subject, endowed with the relevant focus feature, moves from its thematic position to the low focus projection above vP to establish a local spec-head relationship with the focus head.

In many respects, then, the low periphery partially parallels the left periphery in the CP-system (Rizzi 1997); the discourse-related properties encoded in the two peripheries, however, differ in important respects. In particular, the focus projection in the left periphery is incompatible with a new information focus interpretation and it appears to encode specific imports of focus, like mirative and corrective focus (Bianchi & Bocci 2012, Cruschina 2012, Bianchi et al. submitted). By contrast the low IP-internal position expresses new information focus and merely contrastive focus, i.e., a contrast internal to the sentence that does not imply the correction of a previously asserted proposition (Bianchi & Bocci 2012).

In light of this articulated structure of the low periphery, one may wonder whether the post-verbal subject in main wh-questions that require verb-adjacency is located in the low focus projection and convey narrow focus. For main questions, Belletti (2004:39-41) concludes that this cannot be the case, and that the activation of left peripheral and low focus projections are mutually incompatible. Under the assumption that the wh-elements that require verb-adjacency are hosted in the high focus projection in the CP (Rizzi 1997, 2001), the low focus projection cannot be available in this type of questions. Along similar lines, Bocci (2013:162-172) argues that, in contrast to declarative sentences, prosodic prominence cannot be shifted freely in this type of wh-questions. This suggests that in these questions the focus structure is constrained.

In a sentence like (5), for instance, if a narrow focus interpretation could be assigned to the post-verbal complement *a Marina*, this constituent should be pronounced with a the relevant degree of prominence. However, this is impossible: as long as (5) is interpreted as a genuine question, a *Marina* cannot be assigned any special prominence.

- (5) Chi (diavolo) hai            presentato a Marina durante la cena?  
      who (the hell) AUX-II-sg introduced to Marina during the dinner  
      ‘Who did you introduce to Marina during the dinner?’

It is important to notice that post-verbal subjects in declarative sentences do not necessarily express focus, but can also function as right-dislocated topics. In these cases, the subject moves to a topic projection above vP (e.g., Cecchetto, 1999; Belletti, 2001). The possibility thus arises that post-verbal subjects in wh-questions that require verb-adjacency are right-dislocated elements. However, Cardinaletti (2001) convincingly shows that this is not necessarily the case and that post-verbal subjects in wh-questions can remain in situ, i.e., in their thematic position. This is exemplified in (6), where *nessuno* (“nobody”), an element that can never undergo right-dislocation, can nonetheless occur post-verbally in wh-questions.

- (6) A chi    non ha            telefonato nessuno?  
      to whom not AUX-III-sg telephoned nobody  
      ‘Who did anybody telephone?’

Following Cardinaletti's analysis, we assume that in wh-questions that disallow preverbal subjects, subjects can stay in situ in their thematic position, without a conveying specific information structure value: they qualify neither as topic nor as focus.

Having established this, the issue now concerns the status of post-verbal subjects in questions that allow preverbal subjects, together with their information structure import. In wh-questions that allow preverbal subjects, subject inversion is clearly grammatical. Consider (7): it is our intuition that the interpretation of (7.a) is not equivalent to that of (7.b) and that post-verbal subjects in questions that allow preverbal subjects convey the same information values as declarative sentence, in sharp contrast with the lack of focus interpretation of post-verbal subjects in inverting wh-questions (7.c).

- (7) a. Perché Gianni telefona?  
      why John call-III-sg.  
      ‘Why is John calling?’  
      b. Perché telefona Gianni?  
      why call-III-sg. John  
      ‘Why is John calling?’

- c. Dove telefona Gianni?  
 where call-III-sg. John  
 ‘Where is John calling?’

In light of these facts, we designed two experiments aimed at investigating whether in broad focus contexts, Italian native speakers display a preference for either pre- or post-verbal subjects, and whether this preference is modulated by clause-type (root vs. embedded), question-type (*dove/where*, *perché/why* and *yes/no*) and continued exposure to a different linguistic system (native speakers vs. native in potential attrition due to English exposure).

### 3. Experimental investigation

Three experiments were conducted to investigate Italian speakers' preferences for pre- vs. post-verbal subjects in a number of syntactic contexts. In Study 1 and Study 3, we asked participants to choose between interrogative questions with pre-verbal or post-verbal subjects. In Study 2, we partially validate the results of Study 1 (embedded questions only) via a rating task.

#### 3.1. Study 1

##### 3.1.1 Method

##### 3.1.2. Participants and Procedure

Forty-five participants were administered an online language questionnaire followed by an online forced-choice experiment. The language questionnaire was aimed at ensuring that they were indeed monolingual native speakers of Italian and that they were not currently living abroad or receiving substantial exposure to languages other than Italian. The results of Study 1 are based on the responses of 12 native speakers who met the above criteria.

After completing an online language questionnaire administered via Survey Gizmo, participants were redirected to the experimental questionnaire, which was also presented via Survey Gizmo. Each item was presented individually and participants could not change their answers once they hit the “Submit” button. The entire session lasted on average between 30 and 40 minutes.

##### 3.1.3. Materials

The experimental materials consisted of 36 brief written exchanges between two speakers (A and B). The exchange was used to set up the context for the experimental item, which consisted of a pre-verbal and a post-verbal subject version of the same interrogative structure. The interrogative clause always consisted of an unergative verb and the subject. The participant’s task was to choose between these two alternatives, as shown in (8):

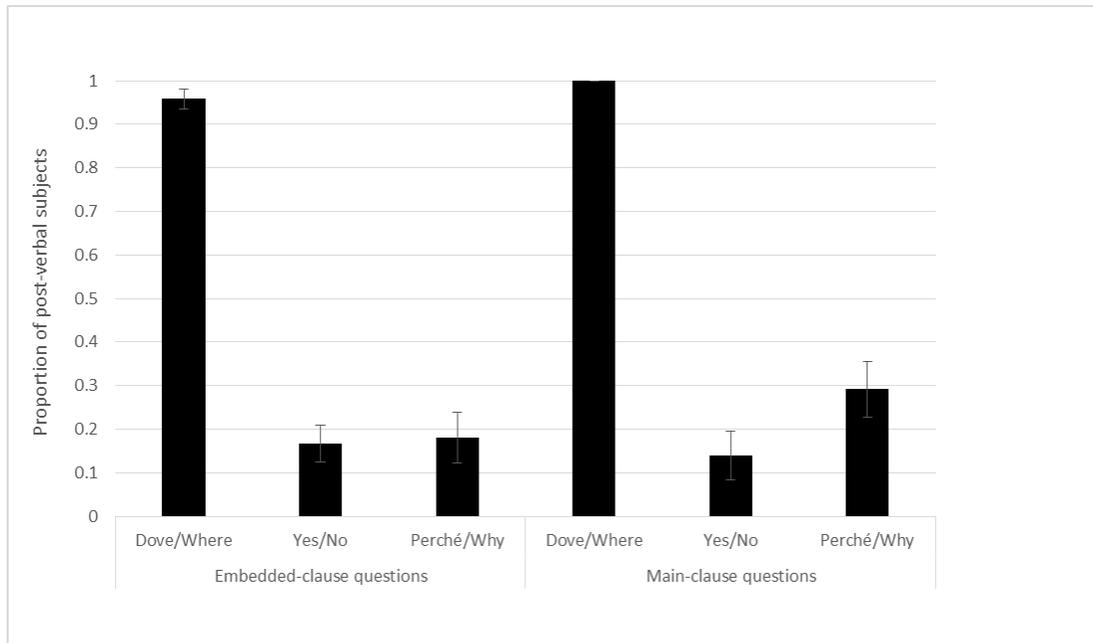
- (8) A: Questa musica è terribile! Non mi viene proprio voglia di andare in pista.  
'This music is terrible! I really don't feel like dancing'
- B: Hai proprio ragione...Non so perché Marta balla  
have-II-sg reason not know-I-sg why Marta dance-III-sg  
'You are totally right. I don't know why Marta dances'
- B: Hai proprio ragione...Non so perché balla Marta  
have-II-sg reason not know-I-sg why dance-III-sg Marta  
'You are totally right. I don't know why Marta dances'

Care was taken to ensure that the discourse contexts did not induce a narrow focus interpretation for the subject in the experimental sentences. Moreover, in order to disfavor a right-dislocated topic interpretation of the post-verbal subject, the subject of the target clauses was not previously introduced in the discourse, Two factors were manipulated within subjects: clause-type (main-clause vs. embedded-clause) and question type (*dove/where*, *perché/why* and *yes/no*). The materials consisted of 18 main-clause questions (6 *where*, 6 *why*, 6 *yes/no*) and 18 embedded-clause questions (6 *where*, 6 *why*, 6 *yes/no*). Clause-type was manipulated between items, while question-type was manipulated within items. Three lists were created so that each verb would only appear once with each question-type. The order of presentation was fixed and did not vary across lists. In order to control for order effects, three additional lists were created in which the order of the items was reversed.

#### *3.1.4. Results*

As can be seen in Figure 1, where the mean proportions of post-verbal responses as a function of clause-type and question-type are shown, post-verbal subjects are strongly preferred in both main and embedded *dove*-questions, but are instead dispreferred in both main and embedded *yes/no* and *perché*-questions. These results confirm the intuition that in Italian (a) main and embedded interrogatives pattern alike and (b) pre-verbal subjects are preferred when this position is available (i.e., *yes/no* and *perché*-questions vs. *dove*-questions). These results are also compatible with the hypothesis that post-verbal subjects are the unmarked option, and thus do not bear a narrow focus interpretation, when the pre-verbal position is unavailable.

**Figure 1. Monolingual speakers' preference for post-verbal subjects over preverbal subjects (proportion) in embedded and main-clause questions, by for yes-no, *dove/where* and *perché/why*-questions.**



These results are confirmed by our statistical analyses based on multi-level mixed effects regressions with log odds of a post-verbal subject response as the dependent variable, clause-type (main-clause vs. embedded-clause) and question-type (*dove*, *perché* and yes/no) as fixed effects and crossed by-subject random intercepts and slopes. Post-verbal subject responses were equally likely in main and embedded questions (No significant effect of clause-type: *Estimate*: .21; *SE*: .16,  $p = .20$ ), but were less likely with *perché* and yes/no as compared to *dove*-questions, regardless of clause-type (Main effect of question-type: *Estimate*: -2.53, *SE*: .11,  $p < .01$ ; No interaction between clause-type and question-type: *Estimate*: -.11, *SE*: .23,  $p = .63$ ). Moreover, post-verbal subject responses were overall more likely in *perché* than in yes/no questions (*Estimate*: .42, *SE*: .20,  $p = .03$ ), and this pattern was particularly pronounced in main questions (Interaction: *Estimate*: .76, *SE*: .39,  $p = .05$ ).

## 3.2. Study 2

### 3.2.1. Methods

#### 3.2.1.2 Participants and Procedure

108 native Italian speaker participants who were currently residing in Italy and who did not take part in Study 1 were administered an online rating experiment. The experiment was presented online via Survey Gizmo. Each item was presented individually and participants could not change their answers once they hit the "Submit" button. The entire session lasted on average between 30 and 40 minutes.

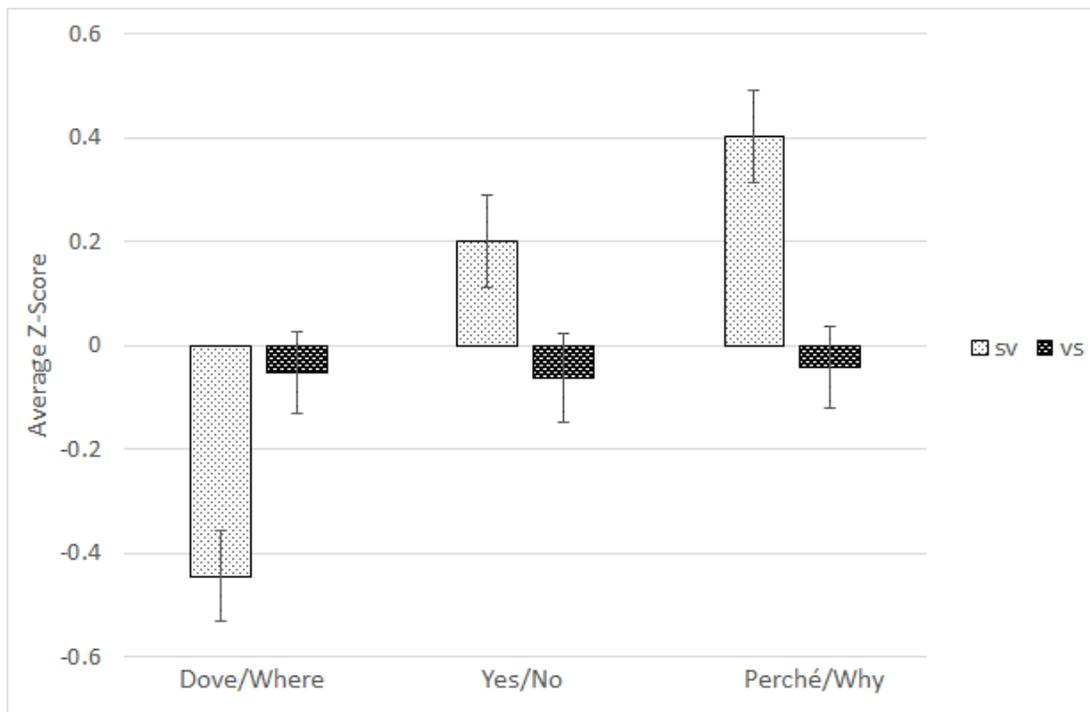
#### 3.2.1.3 Materials

The materials consisted of brief written exchanges between two speakers (A and B). Participants were asked to judge how “natural” different sentences sounded to them by using a sliding scale (Range: 1-1000). The materials that are relevant for the current study were used as fillers for another study investigating the availability of focus fronting in declarative sentences. The items used for this experiment were the same as the post-verbal and the pre-verbal versions of the embedded questions presented in Study 1. The experiment thus consisted of 36 relevant items (18 pre-verbal and 18 post-verbal subject embedded questions introduced either by *dove*, *perché* or by a yes/no operator), out of a total of 108 sentences.

### 3.2.2. Results

Participants’ rating judgments were converted into z-scores. Figure 2 plots average z-score judgments for pre- and post-verbal subject *dove*, *perché* and yes/no embedded questions. As can be seen from Figure 2, *dove*-questions with post-verbal subjects were rated more highly than pre-verbal subject ones. The opposite pattern was observed with *perché* and yes/no questions, where the pre-verbal subject version of the sentence was rated more highly.

**Figure 2. Study 2: Rating judgments (in z-scores) for pre- (SV) and post-verbal (VS) subject embedded questions introduced by *dove* ‘where’, *perché* ‘why’, or a yes-no operator.**



These results are confirmed by statistical analysis based on multi-level mixed effects regressions with z-scores of rating as the dependent variable, subject-position (pre-verbal vs. post-verbal) and question-type (*dove*, *perché* and yes/no) as fixed effects and crossed by-subject and by-item random intercepts and slopes. *Dove*-questions were rated overall less highly than *perché* and yes/no-questions (*Estimate*: .26, *SE*:

07,  $p = .01$ ); this effect partially stems from the strong unacceptability of pre-verbal *dove* questions.

Crucially, there was a significant interaction between subject-position and question-type (*Estimate*: -.53, *SE*: .09,  $p < .01$ ). While for *dove* questions, the post-verbal subject version of the sentence was rated significantly higher than the pre-verbal one (*Estimate*: .41, *SE*: .11,  $p < .01$ ), the opposite was true for *perché* (*Estimate*: -.47, *SE*: .13,  $p < .01$ ) and yes/no questions (*Estimate*: .58, *SE*: .22,  $p < .01$ ).

### 3.3. Study 3

#### 3.3.1. Method

##### 3.3.1.2 Participants, Procedure and Materials

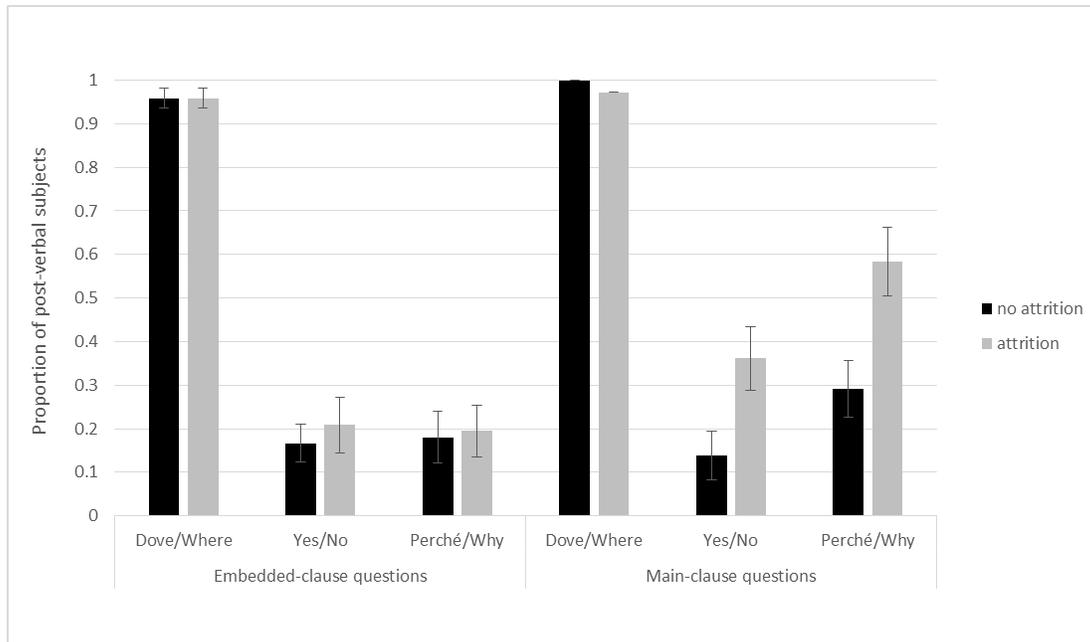
The performance of the 12 native speakers of Italian from Study 1 was compared to that of native speakers of Italian who were potentially undergoing L1-attribution. To identify the latter group, participants who had been living in the United States or the U.K. for at least 2 years at the time of testing were administered a brief additional questionnaire. The attrition-questionnaire was closely based on that of Keijzer (2007). 12 speakers undergoing potential attrition were identified in this way. All but one of the participants who were classified as being potentially in attrition reported occasionally (a) experiencing lexical access difficulties, (b) using syntactic structures that might sound weird in Italian, and (c) directly translating expressions from English to Italian. The same materials and procedure from Study 1 were used.

##### 3.3.2. Results

Statistical analyses were based on multi-level mixed effects regressions with log odds of a post-verbal subject response as the dependent variable, clause-type (main-clause vs. embedded-clause), question-type (*dove*, *perché*, and yes/no) and group (attrition vs. no-attribution) as fixed effects and by-subject random intercepts and slopes.

As can be seen in Figure 3, participants in potential L1 attrition produced overall more post-verbal subject responses than non-attribution participants, but this pattern was particularly pronounced for main *perché* and yes/no-questions.

**Figure 1. Study 3: Preference for post-verbal subjects over pre-verbal subjects (proportion) by main vs. embedded questions, by for yes-no, *dove* ('where'), and *perché* ('why') questions and language group (monolingual speakers vs. speakers in potential attrition).**



These conclusions are confirmed by the statistical analysis. Participants in potential L1 attrition produced more post-verbal subjects than non-attrition participants (*Estimate*: .39, *SE*: .19,  $p = .05$ ), main questions were associated with more post-verbal subject responses than embedded questions (*Estimate*: .54, *SE*: .13,  $p < .01$ ) and *perché* and yes/no questions were associated with less post-verbal subject responses than dove/where questions (*Estimate*: -2.29, *SE*: .11,  $p < .01$ ). However, this pattern was qualified by two two-way interaction between Group and question-type (*Estimate*: .47, *SE*: .12,  $p = .04$ ) and Group and clause-type (*Estimate*: .67, *SE*: .26,  $p = .01$ ) and a three way interaction between Group, clause-type and question-type (*Estimate*: .85, *SE*: .32,  $p < .01$ ). While monolingual participants' preferences for post-verbal subjects did not differ between main and embedded questions, participants in potential L1 attrition produced more post-verbal subjects in main than in embedded questions (*Estimate*: .31, *SE*: .14,  $p = .03$ ). Moreover, while participants in potential L1-attrition produced more post-verbal subject-responses than non-attrition participants in main-clause questions overall and in *perché* and yes/no questions overall, this pattern was particularly pronounced for main-clause *perché* and yes/no questions.

These results indicate that native speakers of Italian strongly prefer post-verbal subjects with *dove* questions, but show the opposite pattern in *perché*-why and yes/no questions, in both main-clause and embedded-questions. However, these preferences are not set once and for all: native speakers of Italian who live in an English-speaking environment and use English as their primary means of communication seem to be in the process of shifting their preferences towards post-verbal subjects in all main-clause questions, regardless of question-type.

#### 4. Discussion and Closing Remarks

#### 4.1. Monolingual Italian Native Speakers

The results of three experiments show that Italian monolingual speakers strongly prefer post-verbal subjects in main *dove*-questions, as expected in light of the literature, and pre-verbal subjects in main *perché* and yes-no questions, supporting our initial intuition (cf. 2.2.§). In main *perché* and yes-no questions both the pre-verbal and the post-verbal subject position are structurally available, but the two positions are not equivalent. In contexts that do not induce a narrow focus or topic interpretation on the subject, like the ones we tested, the post-verbal subject position is clearly dispreferred.

We hypothesize that, in *perché* and yes-no questions, post-verbal subjects become fully acceptable, and might even be preferred to pre-verbal subjects, if they are licensed by a topic or narrow focus interpretation. Consider (9). In the context of (9A), the subject in speaker B' questions conveys an import of merely contrastive focus (in the sense of Bianchi & Bocci, 2012). In such a context, a post-verbal subject (9B) is perfectly felicitous and may be preferable to pre-verbal one (9B'). The same seems to be true for yes-no questions: see (10)

- (9) A: Gianni mi ha appena portato il libro.  
 'John has just brought me a book'  
 B Perché te l'ha portato Gianni e non Leo?  
 why to-you it AUX brought John and not Leo  
 'Why did John bring it to you and not Leo'  
 B' Perché Gianni te l'ha portato e non Leo?  
 why John to-you it AUX brought and not Leo
- (10) A: Gianni mi ha appena portato il libro.  
 'John has just brought me a book'  
 B Te l'ha portato Gianni? Credevo che te lo dovesse portare Leo.  
 to-you it has brought John Thought-I-sg that to-you it-should bring Leo  
 'Did John bring it to you? I thought that Leo should have brought it'  
 B' Gianni te l'ha portato? Credevo che te lo dovesse portare Leo.  
 John to-you it has brought Thought-I-sg that to-you it-should bring Leo

If this hypothesis is correct, there is a contrast between types of main questions with respect to the licensing of post-verbal subjects. In questions that allow preverbal subjects, the post-verbal subject position must be licensed by a topic or narrow focus interpretation, while in wh-questions that disallow preverbal subjects, post-verbal subjects are licensed independently of their discourse-related properties.

Along the lines of Belletti (2004), we have assumed in 2.2. that the low focus projection is not available in main *dove*-questions since they involve the activation of the left peripheral focus projection (cf. 2.2.§). However, in yes-no and *perché* questions, nothing should prevent the low focus projection from activating and licensing a narrow focus interpretation on the post-verbal subject. According to Rizzi's (1997, 2001), in fact, *perché* and the yes-no operator target a position higher

than the left peripheral focus projection, as shown by the fact that *perché* can precede a focused constituent fronted to the left periphery. Since the left peripheral focus projection is not involved in *perché* and the yes-no, it does not block low IP-internal focus projection.

Finally, our results show that the subject distribution observed in main questions across yes-no, *perché*, and *dove* questions is mirrored in embedded questions with indicative mood. In this respect, Italian patterns with other Romance languages like Spanish (Torrego, 1994), Catalan (Solà, 1992) and Romanian (Soare, 2009).

#### *4.2. Bilingual Italian Native Speakers in Potential Attrition*

The results of Study 3 show that, differently from monolingual speakers of Italian, L1 speakers in potential attrition differentiate between main and embedded-clause questions in terms of their preferences for post-verbal subject. In embedded questions, their responses closely mirror those of monolinguals (strong preference for pre-verbal subjects in yes/no and *perché*-questions, and strong preference for post-verbal subjects in *dove*-questions). By contrast, in main questions, speakers in potential L1-attrition exhibit a generalized shift in preference towards post-verbal subjects: while no difference is observed with regards to *dove*-questions (where pre-verbal subjects result in strong ungrammaticality), L1 speakers in attrition display a stronger preference for post-verbal subject yes-no and *perché*-questions compared to monolingual speakers.

We hypothesize that, under the pressure of English, a language in which subjects are always found after the inflected verb in main questions, participants in potential attrition are in the process of shifting their preferences towards a word order that more closely mirrors that of their dominant L2.

The pressure of English, however, does not affect speakers' preferences when such shifts would result in syntactically illicit structures. In standard Italian, in fact, post-verbal and pre-verbal subjects are both possible grammatical options with yes/no and *why*-questions, albeit with different information structure properties (i.e., post-verbal subjects necessarily count as narrow focus). The pressure of the L2 English system thus results in a word-order that is not ungrammatical, but inappropriate given the discourse context. On the other hand, the Italian grammar resists the pressure of the L2 English system when this pressure results in an ungrammatical word-order: the pressure of the pre-verbal L2 word-order in embedded questions fails to engender an ungrammatical pre-verbal word order in *dove*-questions. In line with other research on L1-attrition (e.g., Tsimpli, et al., 2004; Tsimpli, 2007), our results suggest that L2-related pressures mainly affect discourse-related but not the core syntactic properties of the native grammars of speakers in attrition.

In closing, we note that our hypothesis concerning the licensing conditions of post-verbal subjects in embedded yes/no and *perché*-questions, together with our hypothesis regarding the diminished effect of discourse-related properties in L1 attrition, is on the right track, we expect that in embedded question where a narrow focus interpretation of the subject is favored, monolingual speakers should show a preference for post-verbal subjects, regardless of question-type. In this kind of

discourse contexts, L1 attrition speakers are expected to show, similarly to monolingual speakers, a preference for *dove*-questions with post-verbal subjects; in contrast, they are expected to show a preference for pre-verbal embedded yes/no and *perché*-questions. This prediction awaits further *interrogative investigations*.

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