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Does prosody meet syntax? A case study on standard Italian cleft sentences and left peripheral focus

Abstract: In this work we deal with two structures that have a very similar pragmatic function in Italian and have been claimed to have similar semantic and syntactic properties, namely clefts and left peripheral focus. Since Chomsky (1977. On wh-movement. In Peter W. Culicover, Thomas Wasow & Adrian Akmajian (eds.), *Formal Syntax*, 71–132. New York: Academic Press.) they have been both considered as instances of A'-movement and should therefore behave alike. Here we investigate their prosody and their syntax on the basis of three experimental studies and show that while the prosodic patterns found are indeed very similar, their syntax is less homogenous than expected if we apply general tests that have been traditionally used to distinguish A- from A'-movement. In particular, we will discuss three of these tests, namely parasitic gaps, weak crossover and anaphoric binding and show that the two constructions yield quite different results. We analyse the differences within the framework of featural relativized minimality originally proposed in Rizzi (2004. Locality and the left periphery. In Adriana Belletti (ed.), *Structures and Beyond: The Cartography of Syntactic Structures 3*, 223–251. Oxford: Oxford University Press.) and subsequent work. On this basis, we conclude that there is no one to one match between prosodic and syntactic properties, since we observe differences in the syntactic behaviour of the two constructions that do not surface in the prosodic patterns. Indirectly, this study sheds new light on the interface between prosody and syntax and is a confirmation of a modular theory of the components of grammar: some specific syntactic properties have no reflex in other components of grammar and can only be detected through purely syntactic tests.

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1 Prosodic study

1.1 Experimental design

The prosodic experimental study presented in Pinelli et al. (in press) aimed to confirm the intuition that cleft sentences and left focalizations have exactly the same prosodic realization. In order to prove this hypothesis, a set of minimal pairs of cleft sentences and left focalizations was created, taking into account different syntactic variables. As can be seen in Table 1, the test conditions included (a) main clauses with a singular subject clefted/focalized constituent, (b) main clauses with plural (coordinate NPs) subject clefted/ focalized constituents[1], (c) main clauses with a direct object clefted/focalized constituent and (d) embedded clauses with a singular clefted/focalized constituent (both subject and direct object). In order to observe potential differences in the prosodic realization of different kinds of cleft sentences, which have been said to have different underlying syntactic structures, we added a small set of cleft sentences contrasting by their information value: 2 minimal pairs of corrective clefts vs. new information clefts[2] (Table 2).

Every target sentence was inserted in a short written conversational context[3], and 40% of fillers was added to the test. A sociolinguistically homogeneous group of 4 female Italian speakers (aged 20–28) of the variety of Italian spoken in Rome

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[1] The choice of coordinate NPs as clefted/focalized constituents has a purely prosodic motivation: even if it does not influence the syntactic structure, it could give rise to a different pitch accent selection and distribution in comparison with single NP constituents.

[2] Cf. Belletti (2008, 2015). In corrective clefts, the clefted constituent moves to the left periphery of the lexical verb, while in new information clefts it moves to the vP left periphery of the copula. Note that according to Belletti (2008), Italian new information clefts can only be subject clefts; for that reason, we only tested subject clefts for this last variable. In order to obtain the new information reading, the target sentences were preceded by a wh- question in the foregoing context:

i) A. *Chi è che lavora a Roma?*
     'Who works in Rome?'
   B. *È nonno Nanni che lavora a Roma.*
     'It is Grandpa Nanni that works in Rome.'

[3] The short contexts have been added to guide the interpretation and make the reading as natural as possible. An example of a context which should elicit a corrective reading of the focalized word is presented below:

Table 1: Syntactic variables for the prosodic test: minimal pairs of clefts and focalizations.

	Corrective clefts	Corrective focalizations
Main Singular (subject)	*È Andrea che rimane due anni a Londra* 'It is Andrea that stays two years in London'	*ANDREA rimane due anni a Londra* 'ANDREA stays two years in London'
Main Plural (subject)	*Sono Andrea ed Angelo che vivranno due anni a Londra* 'It is Andrea and Angelo that will live in London for two years'	*ANDREA ED ANGELO vivranno due anni a Londra* 'Andrea and Angelo will live in London for two years'
Object	*È Debora che vedo bene in un'azienda a Milano* 'It is Debora that I can imagine in a company in Milan'	*DEBORA vedo bene in un'azienda a Milano* 'DEBORA I can imagine in a company in Milan'
Embedded	*Ho sentito dire che è Marina che regala gioielli di valore* 'I heard that it is Marina that gives valuable jewels as a gift'	*Ho sentito dire che MARINA regala gioielli di valore* 'I heard that MARINA gives valuable jewels as a gift'

Table 2: Information structure variable for the prosodic test: minimal pair of corrective cleft and new information cleft.

	Corrective clefts	New information clefts
Main singular	*È nonno Nanni che lavora a Roma* 'It is Grandpa Nanni that works in Rome'	*È nonno Nanni che lavora a Roma* 'It is Grandpa Nanni that works in Rome'

were recorded in a quiet room while reading the short texts three times in pseudo-randomized order. 153 target sentences (two out of the three repetitions recorded) were first segmented at phone, syllable and word level with *Praat*[4], and then prosodically analysed within the framework of the Autosegmental-Metrical theory of Intonation, following the ToBI transcription conventions[5].

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i)   *(Due amici stanno chiacchierando al pub)*
      '(Two friends are talking in a pub)'
   A: *Mio fratello mi ha detto che Adriano se ne resta per due anni a Londra.*
      'My brother told me that Adriano is staying two years in London.'
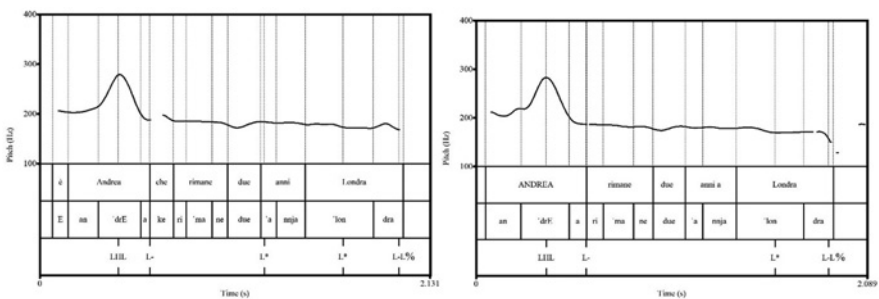   B: *Hai capito male: Andrea rimane due anni a Londra, non Adriano.*
      'You didn't understand: Andrea stays two years in London, not Adriano.'

4 www.praat.org (Paul Boersma and David Weenink).
5 Cf. Beckman and Pierrehumbert (1986), Ladd (1996). For the principles of the Italian implementation of ToBI, see Fivela et al. (2015).

1.2 Results

The main results of the study confirm that the prosodic realization of corrective cleft sentences and left focalizations is the same. As Figure 1 shows, the prosodic phrasing of the cleft sentence (left) and the left focalization (right) is the same: each sentence is phrased into two intermediate phrases (*ip*) with the same partition. The first *ip* is coextensive with the cluster copula+clefted constituent in the cleft sentence ("è Andrea" in Figure 1, left) and with the focalized constituent in the left-focalized sentence ("ANDREA" in Figure 1, right). The second *ip* is coextensive with the *that*-clause in the cleft structure and with the postfocal material in the left-focalized sentence. The main and nuclear prominence of the clause is associated with the clefted/focalized constituent contained in the first *ip*, while the second *ip* clearly exhibits the properties of a postfocal phrase, i.e. a compressed low and flat F_0 contour. The prosodic structure as a whole can therefore be analysed in both cases as a focus+background structure, the first constituent being a focal *ip* both in clefts and focalizations, the second *ip* being postfocal. The pitch accent distribution is the same for both constructions, i.e. a rising-falling focal pitch accent[6] as the head of the first *ip* and only low L* prominences in the postfocal constituent[7].
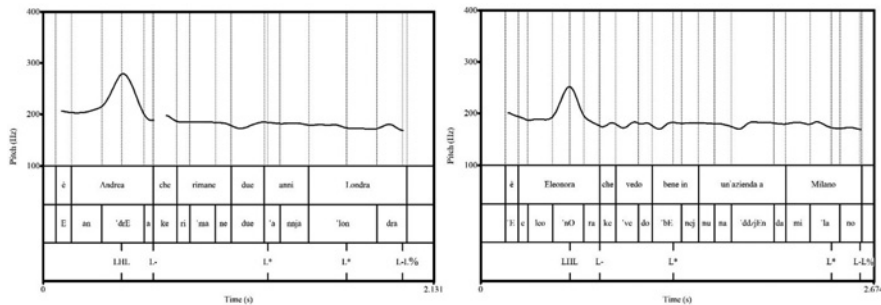

Figure 1: Minimal pair of corrective cleft sentence *è Andrea che rimane due anni a Londra* ('it is Andrea that stays two years in London', left) and corrective focalization *ANDREA rimane due anni a Londra* ('ANDREA stays two years in London', right).

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6 We do not take any stance in this paper on the phonological status of this rising-falling pitch accent, since it has no relevance for the syntactic argumentation. We will label it LHL and leave the phonological categorization to future more thorough investigations.
7 The data presented in this paper are an oversimplification of the results of the study that is functional for the syntactic argumentation. Even if presented in a non-technical fashion, the data we report are the results of inferential statistical analyses fitted to the observed data.

A more detailed analysis of the focal pitch accents revealed that there is no significant difference between clefts and focalizations, neither in the alignment of the tonal targets to the tonic syllable, nor in the scaling of the pitch accent (Δ-rising and Δ-falling of the rising-falling contour). Main and embedded cleft/focus clauses behave prosodically the same, as well as sentences with singular vs plural clefted/focalized constituents. Finally, no asymmetry between subject clefts and object clefts has been detected at a prosodic level, as Figure 2 shows: both sentences have the same phrasing and select the same pitch accents.


Figure 2: On the left: Subject cleft *è Andrea che rimane due anni a Londra* ('it is Andrea that stays two years in London'); on the right: object cleft *è Eleonora che vedo bene in un'azienda a Milano* ('it is Eleonora that I can imagine in a company in Milan').

The comparison between corrective clefts and new information clefts reveals interesting facts which need a more accurate investigation due to the limitation of the data set. Even if the two cleft types have different focal imports (corrective focus vs. new information focus), they have been realized with exactly the same prosodic phrasing (focal *ip* + postfocal *ip*). On the other hand, the focal pitch accent selection clearly disambiguates the two cleft types: corrective clefts bear an LHL rising-falling accent, while new information clefts bear a H+L* falling accent[8] (see Figure 3). Although we cannot draw any conclusive results from such a small set of data, what has been found shows that a further study of these two types of clefts could bring interesting results.

The full picture of the prosodic study has been thoroughly outlined in Pinelli, Avesani, Poletto (in press).

8 H+L* is the typical realization of the nuclear pitch accent in declarative clauses, attested in all varieties of Italian examined so far (see Grice et al. 2005, Fivela et al. 2015).
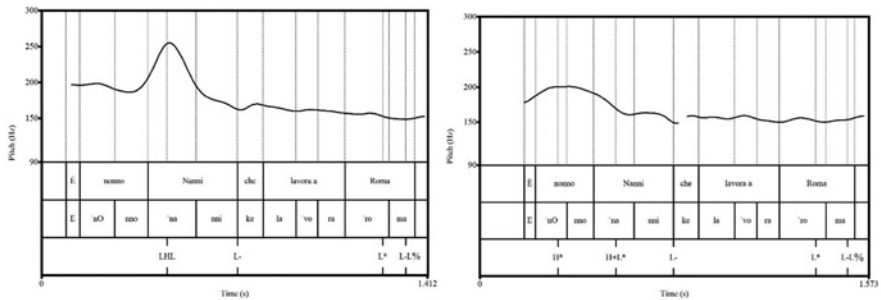
Figure 3: Minimal pair: the sentence *è nonno Nanni che lavora a Roma* ('it is Grandpa Nanni that works in Rome') has been realized as a corrective cleft (on the left) and as a new information cleft (on the right).

To sum up, the main results of the prosodic experimental study for the purposes of this paper are that the prosodic realization of corrective cleft sentences and left focalizations is the same, and that there is no significant prosodic difference between subject clefts and object clefts. Cleft/focus main clauses and embedded clauses do not display any difference either. Any syntactic difference between those structures should therefore be encoded at a level of computation that is not visible for prosody.[9]

2 Preliminary syntactic study

Previous theoretical approaches to the study of cleft sentences proposed different syntactic analyses for these structures. The literature on clefts is very extensive and cannot be summarized here in detail. There are basically two families of analyses: several authors consider cleft sentences as biclausal structures, composed of a copular clause and a (pseudo-) relative clause (a.o. Belletti 2008; Den Dikken 2013). Others claim that the copula has lost its semantic value and should not be considered a verb any longer, which leads to a monoclausal interpretation of clefts (see Meinunger 1998; Munaro and Pollock 2005). The test to prove whether the copula has lost its verbal status is the (im)possibility to be inflected for tense, person and number. The two views have been applied to different languages, in this work we limit our investigation to standard Italian. Among the recent analyses that have been proposed on the basis of Italian data, we consider two, which will be instrumental to the discussion of our data.

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9 For a detailed discussion of these results within prosody see Pinelli Avesani and Poletto (in press).

Frascarelli and Ramaglia (2013) propose that cleft sentences are analysed as biclausal structures consisting of a copular clause and a free relative clause which is moved to the left periphery of the main copular clause in a dedicated functional projection. The derivation is presented as follows: starting from a Small Clause that has the free relative DP as the subject and the "cleft constituent" as the predicate, the relative DP moves to the SpecIP subject position and subsequently reaches the left peripheral FamP projection (Familiarity Topic, see Frascarelli and Hinterhölzl 2007). The "cleft constituent" is then attracted to the higher left peripheral FocP projection, and finally the remnant IP undergoes movement and reaches the SpecGP position (Ground Phrase, see Poletto and Pollock 2004). The resulting structure is therefore entirely included into the left periphery of the copular clause, as can be seen in the structure in (1), (Frascarelli and Ramaglia 2013, example 44d):

(1)   [$_{GP}$ [$_{IP}$ t'$_{DP}$ è [$_{SC}$ t_{DP} t_{NP}]] [$_{FocP}$ [$_{NP}$ ME] [$_{FamP}$ [$_{DP}$ [$_{SC}$ [$_{NP}$ pro] [$_{CP}$ che pro hai visto]]] t_{IP}]]]

Even if there is no unitary analysis of the exact movements inside cleft sentences, a common feature of all analyses is that the clefted constituent is first merged low in the structure (in the pseudo-relative clause, assuming a biclausal approach) and undergoes A'-movement, in order to reach a left peripheral[10] FocP position. Here we exemplify this line of thought with Belletti's proposal (2008: 34b). The derivation in (2a) corresponds to the sentence in (2b):[11]

(2)   a. È [$_{CP}$ [$_{Foc}$ con GIANNI] ....[che [Maria ha parlato -]]]
        b. È con Gianni che Maria ha parlato
            Is with G. that M. has spoken
            'It is with Gianni that Maria spoke'

A clear parallelism with the analysis of left focalization structures emerges from these studies: cleft sentences and left focalizations seem to have the same discourse function and a similar syntactic structure at least in terms of movement to the Focus position. Hence the question arises of whether they also have the same syntactic properties.

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10 Different FocP peripheral positions have been proposed in the literature as a landing site for the clefted constituent. For instance, Belletti (2008) proposes a CP left peripheral position for corrective clefts and a vP left peripheral position for new information clefts.
11 Belletti proposes that subject clefts can be new information Focus and in this case the structure is different since the clefted constituent is not in the CP of the embedded clause. This is a case we do not consider here.

The preliminary syntactic study we present was carried out in summer 2017 and aimed to investigate the properties of the FocP projection that is said to be the target position of the clefted/focalized constituent's movement.

2.1 Method

2.1.1 Participants

The participants were 48 non-linguist speakers (17 male, 31 female) between the ages of 20 and 60. All of them were native speakers of Italian and have grown up in Rome.

2.1.2 Materials

Three properties have been detected that could give rise to differences in grammaticality judgements of cleft sentences and left focalizations: (i) the presence of a quantifier as clefted/focalized constituent[12]; (ii) the compatibility of the cleft/focalization clause in embedded contexts; (iii) the compatibility of the cleft/focalization clause in long distance extraction contexts. For each of these three conditions, 10 minimal pairs of cleft sentences and left focalizations have been designed, as exemplified in Table 3. The total number of target couples was 30, to which we added 12 couples of fillers to ensure variation in the syntactic structures presented.

For each of the resulting 42 couples of sentences, a short written conversational context has been created. Every context had a gap in the place of the target sentence, so that the speakers could choose to fill it with the cleft sentence, with the focalization sentence, or to judge both sentences compatible or incompatible with the context[13].

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12 The incompatibility of quantifiers as clefted constituents has been thoroughly discussed from a semantic point of view in Frascarelli and Ramaglia (2013) and is known in the literature. We decided to include condition (i) in the preliminary syntactic study in order to gain empirical evidence for the different behaviour of cleft sentences and left focalizations when a quantifier is involved.

13 An example of the task is reported below in English translation:

i)　　(*Some friends are having lunch together*)
　　　Richard: "What did you say about Anna's birthday present? Do we have to give Judith the money back?"
　　　Paul: "No, you didn't understand: ...."

Table 3: Examples of cleft/focalization minimal pairs for the preliminary syntactic study.

	Cleft	Focalization
i	*Sono tutti che vuole invitare*	*TUTTI vuole invitare*
	'it is everyone that pro$_{subj}$ would like to invite'	'EVERYONE pro$_{subj}$ would like to invite'
ii	*Ho detto che è a Federica che dobbiamo ridare i soldi*	*Ho detto che A FEDERICA dobbiamo ridare i soldi*
	'I said that it is to Federica that we have to give the money back'	'I said that TO FEDERICA we have to give the money back'
iii	*È a Gaia$_i$ che i ragazzi credono che tu abbia prestato il libro _____ $_i$*	*A GAIA i ragazzi credono che tu abbia prestato il libro _____ $_i$*
	'It is to Gaia$_i$ that the guys say you lend the book _____$_i$'	'TO GAIA the guys say you lend the book _____$_i$'

2.1.3 Procedure

The multiple choice task for the resulting 42 randomly ordered[14] short texts has been programmed on SoSci survey[15], an open source platform for online surveys. The speakers took part in the experiment individually, and all the experimental stimuli have been presented to each speaker. There was no time constraint, and each session lasted between 20 and 25 minutes.

    A.   *I said that TO FEDERICA we have to give the money back*
    B.   *I said that it is to Federica that we have to give the money back*

Which of the two sentences would you use in place of the dots?
    1)   A is better
    2)   B is better
   3)   Both
    4)   None of them

One might argue that the multiple choice pattern ("A; B; both; none") is not the best strategy to determine the distribution of focus and clefts. It is not completely clear, for instance, how to account for the "both" responses, or one wonders whether a "Focus" response implies a judgement of agrammaticality on the cleft option or just a slight preference for one structure on the other. This is the reason why we decided to carry out a second test with a slightly different test design.

14 The randomization has been carried out using the function RAND() of Microsoft Excel 365+.
15 www.soscisurvey.de

2.2 Results

The graphs in Figure 4 show the preference rates of the judgments for the three conditions presented above.
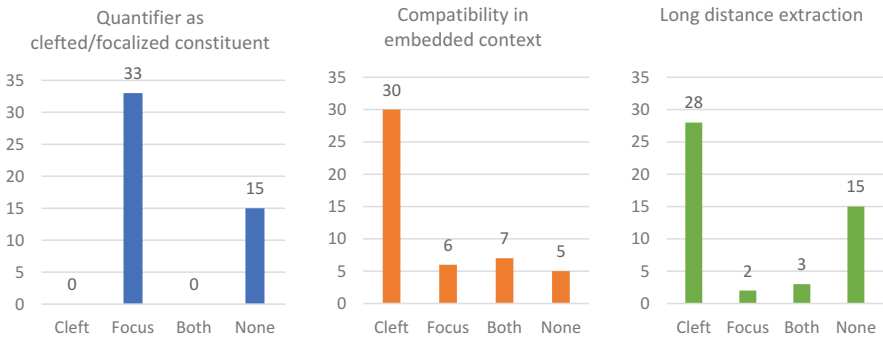
Figure 4: Distribution of the speakers' choices to fill the gaps left in the texts. The four choices can be paraphrases as "Preference for cleft", "Preference for focus", "Both structures are compatible with the context", "None of the structures is compatible with the context". The results are presented as absolute numbers (n. out of 48 speakers) and not as percentages.

Even if the test structure makes it difficult to accurately analyse the results[16] some clear trends can be observed: for all three conditions, the distribution of preferences for cleft and focus is distinctly different. Quantifiers are completely excluded as clefted constituent but well accepted in the focalization sentences, while the cleft structure is highly preferred, as opposed to the focalization, both in embedded contexts and when long distance extraction is at stake. Notice that the literature on left peripheral Focus starting from Rizzi (1997) does not report any impossibility in embedded structure, with the one notable exception of Bianchi (2015).[17] On the contrary, Focus is generally considered by the literature to be embeddable in standard Italian.

In conclusion, this preliminary syntactic study shows that cleft sentences and left focalizations do not have exactly the same syntactic properties. This might be interpreted by assuming that the FocP projection that serves as a landing site for the clefted constituent in cleft structures could be different from the one involved in left focalizations, because the two projections have different accessibility properties (at least in embedding and long distance

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16 See note 13.
17 Bianchi (2015) discusses some restrictions on the presence of (some types of) Focus in non-root clauses.

extraction contexts) and different semantic properties (at least compatibility with quantifiers). However, postulating different FocP positions might not even be necessary, since the difference could be derived in an alternative way. In order to minimize the assumptions on the sentence structure, we will explore the possibility that the differences found in this first study are derived from the different types of further movements that the two constructions require in addition to the movement to FocP.

3 Main experimental study

With the aim to better investigate the properties of the syntactic movement that takes place in cleft sentences and pin down the differences with respect to left peripheral Focus, we carried out a second experimental study. The starting point is the claim that the clefted constituent moves from its base position to a FocP position through A'-movement[18], as the focalized constituent in left focalization does. As a logical consequence, clefted constituents (in clefts) and focalized constituents (in left peripheral focalizations) should behave like wh- elements in wh-question with respect to the standard tests that identify A'-movement.

3.1 Method

3.1.1 Participants

Seventy-eight non-linguist speakers aged 17–55 (mean age: 29,2) took part in this experimental study (37 male, 41 female). The participants were all native speakers of Italian grown up in Rome, and they were naïve to the purpose of the experiment. None of them had taken part in the preliminary syntactic study presented in Section 2.

3.1.2 Materials

In order to prove or contradict the claim that clefted constituents and left-focalized constituent undergo A'-movement, as wh- items do, we took three of the classical A'-movement tests that have been used in the literature on A'-movement and are discussed by Corver and Van Riemsdijk (1994) in their joint work on

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18 Cf. Kiss (1998), Frascarelli and Ramaglia (2013), Belletti (2008).

scrambling – i.e. weak crossover, parasitic gaps and reconstruction – and adapted them to cleft sentences, left focalizations and wh- questions.

The test design was thus obtained crossing two independent variables, each of which had three levels: syntactic configuration (levels: weak crossover, parasitic gaps and reconstruction) and syntactic construction (levels: left focalization, cleft and wh- question). For each of the 9 resulting experimental conditions, three sentences have been created, for a total amount of 27 target sentences.

All target sentences in all conditions displayed A'-movement of the direct object, in order to ensure uniformity in the results. The expectations on the acceptability judgements are listed in Table 4: in a weak crossover context the A'-movement should give rise to mild ungrammaticality[19], while parasitic gaps and reconstruction should be compatible with A'-movement.

Table 4: Conditions of the main experimental study on A'-movement properties and expectations on the acceptability judgements.

Weak crossover	Cleft	*È Marco$_i$ che la sua$_i$ relatrice ha sempre incoraggiato ____$_i$
		'*It is Marco$_i$ that his$_i$ supervisor always supported ____$_i$'
	Focus	*MARCO$_i$ la sua$_i$ relatrice ha sempre incoraggiato ____$_i$
		'*MARCO$_i$ his$_i$ supervisor always supported____$_i$'
	Wh-	*Quale tesista$_i$ la sua$_i$ relatrice ha sempre incoraggiato ____$_i$?
		'*Which student$_i$ did his$_i$ supervisor always support ____$_i$?'
Parasitic gaps	Cleft	È il contratto$_i$ che abbiamo firmato ____ $_i$ senza leggere ____$_i$
		'It is the contract$_i$ that we signed off ____ $_i$ without reading____$_i$'
	Focus	IL CONTRATTO$_i$ abbiamo firmato ____ $_i$ senza leggere ____$_i$
		'THE CONTRACT$_i$ we signed off____ $_i$ without reading____$_i$'
	Wh-	Quale documento$_i$ abbiamo firmato ____ $_i$ senza leggere ____$_i$?
		'Which document$_i$ did we sign off ____ $_i$ without reading____$_i$?'
Reconstruction	Cleft	È questo aspetto di se stessa$_i$ che Angela$_i$ esaspera ____ $_i$ di più
		'It is this aspect of herself$_i$ that Angela$_i$ highlights ____$_i$ the most'
	Focus	QUESTO ASPETTO DI SE STESSA$_i$ Angela esaspera ____ $_i$ di più
		'THIS ASPECT OF HERSELF$_i$ Angela$_i$ highlights ____$_i$ the most'
	Wh-	Quale aspetto di se stessa$_i$ Angela esaspera ____ $_i$ di più?
		'Which aspect of herself$_i$ does Angela$_i$ highlight ____$_i$ the most?'

Each target sentence was inserted in a short written conversational context to promote naturalness in the interpretation of the sentence. In order to minimize

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19 An anonymous reviewer points out that the weak crossover effect is weak, so the results we have are in line with the expectations. What interests us here, though, is not the absolute judgements of the weak crossover effect, but if there are differences in the judgements with clefts compared to left peripheral Focus and wh-movement.

the effect of the discourse context on the acceptability judgements of the three syntactic structures, we designed only one context for each minimal triplet of cleft, focalization and wh- question[20], as exemplified in Table 5 (English translation).

Table 5: An example of the three contexts used for a minimal triplet – cleft, focus, wh- question – in the parasitic gap condition (English translation).

Cleft	Focus	Wh- question
(A bad day at the office)	(A bad day at the office)	(A bad day at the office)
Manager: *So we signed off the authorisation for the purchase without reading how much the amount was??*	Manager: *So we signed off the authorisation for the purchase without reading how much the amount was??*	Assistant: *Sorry to bother you, Dr Smith, but something went wrong: yesterday we signed off a document that nobody had read previously.*
Assistant: *Unfortunately,* <u>*it is the contract that we signed off without reading*</u>*, not the authorisation for the purchase...*	Assistant: *Unfortunately,* <u>*THE CONTRACT we signed off without reading*</u>*, not the authorisation for the purchase...*	Manager: *What?? And* <u>*which document did we sign off without reading?*</u>
Manager: *Damn!*	Manager: *Damn!*	Assistant: *I'm afraid it was the contract...*

In addition to the 27 target stimuli, 40 extra short texts have been inserted in the test with the aim of varying the syntactic structures and the contexts presented to the participants.

3.1.3 Procedure

As well as the preliminary syntactic study (see Section 2), this second experiment has been programmed on SoSci survey platform. The 67 short texts have been uploaded in randomized order to an online questionnaire. Each speaker took part in the experiment individually and saw all stimuli. Participants had to judge the acceptability of the underlined sentence in the context (i.e. the target sentence) on a binary scale: they were asked to choose between "I would say this sentence in this context" (= acceptable) and "I would not say this sentence in this context" (= not acceptable). There was no time constraint and each session lasted about 20 minutes.

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20 While left focalization and clefts can be inserted in an identical context (they are both affirmative sentences), for wh- questions we had to adapt the discourse context in order to insert an interrogative clause.

3.2 Results

Since our aim is to assess the degree of similarity of clefts and focus and compare them to a typical case of A'-movement, like wh-movement, the test shows that there is no uniformity of behaviour of the three constructions we compared, as can be seen in Figure 5.

% Positive judgements
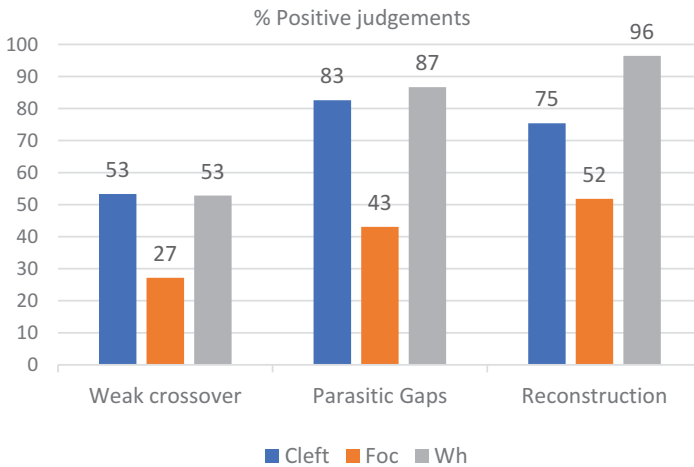
Figure 5: Results of the main syntactic experimental study. Percentages of acceptability rates for clefts, focalizations and wh- questions in three syntactic contexts: weak crossover, parasitic gaps, reconstruction.

First of all, it is interesting to look at the results for wh- items, which are generally considered as the prototypical case of A'-movement. They behave as expected in the parasitic gaps context and when reconstruction is involved, with a high percentage of acceptability, but they also have only a 53% of acceptability rate in the weak crossover context, which is actually a higher rate than expected, since the violation should be weak, but present. These results are an indication that clefts are more similar to wh-movement than left peripheral Focus is.

Cleft sentences pattern with wh- items, with the same unexpected 53% of positive judgements in weak crossover contexts and higher acceptability rates for parasitic gaps, where the results almost perfectly match. In the reconstruction context, however, cleft sentences have been considered less acceptable (75%) than wh- items (96%).

As for Focus, a clear difference of behaviour can be observed compared to the other two structures. As a general trend, focalizations have been judged less

grammatical in all contexts, around half the rates on wh- items. These data show that A'-movement is not a unitary phenomenon, at least not with respect to the three structures – i.e. focalizations, clefts and wh-questions. None of them behaves as predicted from the A'-movement tests, and their behaviour is different from one another.

4 Analysis

The analysis of these data proceeds in two steps: we first analyze the effects found with parasitic gaps and then turn to the other two tests, which will be reduced to a case of minimality.

4.1 Parasitic gaps

While parasitic gaps have a very high degree of acceptance among the speakers for clefts and wh-movement, Focus clearly behaves differently with an acceptance rate of only 27%. We propose that the explanation for this difference has to do with a property of Focus that has gone unnoticed in the literature up to now with the notable exception of Bianchi (2015), namely the fact that clefting is perfectly possible in embedded structures while Focus is less well tolerated. This was rather clear in the first syntactic experiment we presented above in Section 2, from which we report here only the results for embedding:
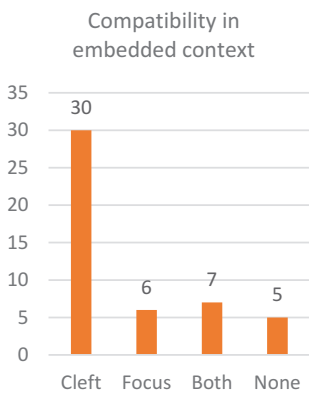
Figure 6: From the preliminary syntactic study (see Section 2): distribution of preference for cleft sentences or focalization in embedded context.

If Focus is not easily embeddable, then it is clear why the test with parasitic gaps is also relatively low in acceptability, since parasitic gaps generally involve an embedded clause, as the sample test shows:

(3)   *IL CONTRATTO$_i$ abbiamo firmato _____$_i$ senza leggere _____$_i$*
       'THE CONTRACT$_i$ we signed off ____$_i$ without reading_____$_i$'

While the focussed element in (3) is located in the main clause, the parasitic gap is in an embedded clause, which is, we surmise, the cause of the low rate of acceptability we observe. We conclude that the case of parasitic gaps can be explained by the fact that Focus is (at least in the variety of the speakers tested, which is the one presently spoken in Rome) not easily embeddable. Why this should be so, is an additional problem, which we have not solved yet (we refer to Bianchi 2015 for a discussion). Nevertheless, the reason why the test does not work with Focus is due to the independent property of Focus and it has to be kept distinct from the other two tests.

4.2 On focus and clefting

What the two tests on weak crossover and reconstruction show us and we have to explain here is (a) what is exactly the distinction between left peripheral Focus and clefting, and (b) crucially why clefting is more similar to wh-movement in both constructions than Focus is. In addition, we have to explain (c) why wh-items are more prone to reconstruct than clefted elements.
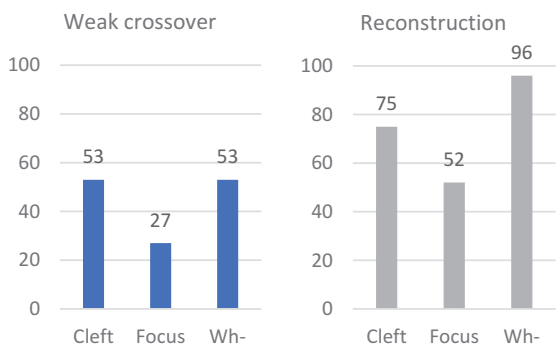
Figure 7: Results of the main syntactic study (cf. Figure 5) divided by syntactic configuration: weak crossover and reconstruction.

Let us start by considering the questions in (a) and (b): The fact that clefting is more similar to wh-movement than left peripheral Focus provides us with empirical evidence for the fact that at a certain step of the derivation clefting must involve an instance of wh-movement similar to the one of interrogatives. This can only be obtained if we assume that the clefted element has not been extracted of the embedded clause, but is merged in the copular clause and is

coreferential with a null operator moving inside the embedded clause from its merge position to the left periphery of the embedded clause.

(4) $[[_{TP}$ *pro* è $[_{SCP}$ $[_{SpecSC}$ $[_{DP}$ Gianni$_i$]] SC° è $[_{DP}$ $[_{CP}$ OP$_i$ che ho visto t$_i$]]]]

In structure (4) the embedded clause generally dubbed as a "pseudo-relative" is nothing else than a free relative clause whose head is coreferential with the clefted item as already proposed by Frascarelli and Ramaglia (2013). The relation between the head of the free relative and the clefted constituent is mediated via a small clause where the clefted XP is the subject and the free relative is the complement.[21]

Notice that this is a relation which is also typical for certain types of appositive relative clauses: Cinque (2008)[22] shows that the relation between the head noun and non-integrated appositive relatives is precisely the one of a small clause with a discourse head granting the coreference between the head of the appositive relative and the external head noun that corresponds to the clefted XP. If we assume that the pseudo-relative found in cleft constructions is the counterpart of a non-integrated appositive relative clauses with a null head, we obtain a perfect match between relatives with lexically realized heads and relatives whose head is null: they can be restrictive, appositive and non-integrated appositive, i.e. mediated by a discourse head as; Cinque (2008) shows.[23] If we are on the right track, the fact that there exist non-integrated appositive free relatives completes the parallel between headed and free relative clauses. Both can either have the structure of restrictive relatives (see; Poletto and Sanfelici 2018), or the structure of (non-integrated) appositives.

The assumption that the element extracted out of the embedded clause is not the clefted element, but a null wh-operator moved from its merge position to the left periphery of the embedded clause is the key to explain why inter-rogatives and clefts pattern alike and differ from Focus. The reason why clefts

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21 A similar conclusion has already been reached by Frascarelli and Ramaglia (2013), who have a very complex derivation for clefts and pseudoclefts that we do not discuss here.
22 We refer to Cinque (2008) for a discussion of the tests that show that in Italian the head noun of a non-integrated appositive relative is external and has not been extracted out of the relative clause.
23 Here we adopt Cinque's (2013) analysis revised in Poletto and Sanfelici (2018) that all relative clauses, including free relatives are matching relatives with a CP internal and an external head.

pattern with wh-movement is that the movement of the null wh-operator internal to the free relative clause is indeed a case of wh-movement like those found in interrogatives. The difference with Focus is that in left peripheral Focus we have movement of a nominal expression and not movement of a wh-operator.

Let us now turn to the case in (c) and try to understand why clefted elements and wh-items behave differently with respect to reconstruction effects.

4.3 On clefting and wh-movement

The classical notion of A'-movement used in the GB framework has long been substituted by other theoretical devices, and with respect to the tests we use here, what is relevant is the idea that movements interfere when they have features in common, as in relativized minimality. Hence, we adopt a featural relativized minimality approach, according to which "the local relation between an extracted element and its trace is disrupted when it crosses an intervening element whose morphosyntactic featural specification matches the specification of the elements it separates. This approach naturally leads to a system able to capture degrees of deviance: the relative acceptability of an intervention configuration will vary as a function of the total, partial or zero featural overlap between the intervener and the target. In a nutshell, configurations involving a lesser degree of featural overlap should be more acceptable than sentences involving a higher degree of overlap" (Villata et al. 2016: 76). Rizzi (2018) also focusses on the fact that a featural relativized minimality account can explain degrees of grammaticality which are not easy to account for in other frameworks that cannot modularize the amount of violation. The fact that the violation becomes stronger the more features the moved element has in common with the element crossing its path is central to our explanation here. This is precisely the type of account that is needed to explain the experimental data we have presented in Section 3. The interesting effect of featural relativized minimality is that we can vary the amount of ungrammaticality on the basis of how many features the two elements (the one that has been moved and the one intervening in the movement path) have in common. The more two elements have features in common the stronger the RM effect in crossing configurations will be. Villata et al. (2016) sum it up as follows:

(5) a. Full match: strong violation
     b. Partial match: weak violation
     c. No match: well-formedness

4.4 Exploiting featural relativized minimality

The basic idea we intend to exploit is the one that has standardly been used in RM analyses of different types of wh-movement, like for instance object relatives: it is possible to exploit the degree of grammaticality violation to single out the features the two elements involved (in our case the focussed item, the clefted constituent or the wh-item) have in common. In our case the null operator moving internally to the free relative in the cleft or the wh-item moving to the interrogative CP has to cross the subject, which counts as the intervener. In (6a) the intervening subject in the free relative corresponds to [la sua relatrice] and in (6b) to [Angela]:

(6)　a. *È Marco$_i$ che la sua$_i$ relatrice ha sempre incoraggiato ____$_i$*
　　　　'It is Marco$_i$ that his$_i$ supervisor always supported ____$_i$'
　　b. *È questo aspetto di se stessa$_i$ che Angela$_i$ esaspera ___$_i$ di più*
　　　　'It is this aspect of herself$_i$ that Angela$_i$ highlights ___$_i$ the most'

Now the problem is why reconstruction is more difficult than in wh-interrogatives, although it is indeed possible also in clefting. The configuration we have here must be a case of intersection of features – a case of "partial match" in Villata Rizzi and Franck's terms – between the intervener and the moved element, i.e. they only share part of the featural endowment since each possesses additional features that are not shared by the other element.

　　Let us first examine the case of interrogative wh-items: clearly both the wh-item and the intervening subject DP have a nominal feature in common. Nevertheless, wh-items must have a quantificational feature of some sort, or even more than one, if we adopt the approach proposed in Poletto and Pollock (2009) that wh-items contain a disjunction and an existential feature. On the other hand, DPs do not have this/these features but most probably features related to referentiality, which is what wh-items lack. If we are on the right track, comparing the features of interrogative wh-items with those of normal DPs we get a case of intersection, where only the nominal feature is the common one:

(7)　QP: [+**NP**] [+Disjunction] [+Existential]

(8)　DP: [+**NP**] [+Referential]

Evidently, the case of Focus is expected to have a stronger effect, since the XP moved to the left peripheral Focus position is itself a DP, which matches more features of the intervening DP. This is exactly what we have found: both reconstruction and weak crossover cases are not judged as grammatical for Focus.

The reason why the judgements on clefts are in between Focus and wh-interrogatives is that the operator that is moved and crosses the subject DP containing the anaphor must have more features in common than wh-interrogatives but fewer than Focus. Assuming that the element that is moving is the null operator in the free relative grants us precisely this result: the type of operator of a relative clause must be more similar in its feature endowment than wh-interrogatives, since the variable contained in the operator is bound by the head noun, which is in turn coreferent with the clefted item. We can represent this by arguing that relative operators have the existential feature (that does not match the one of the intervening referential DP) but do not have a disjunction feature as wh-interrogatives do, and are therefore less distinct from the intervening referential subject.[24]

More generally, we can conclude that also the results on reconstruction lend support to an analysis in which the clefted constituent itself is merged in the main clause and the embedded clause is in effect a free relative clause with a null head noun, since this allows us to modularize the differences between interrogatives, focus and clefts. This would not be possible in an approach that assumes that clefts are identical to left peripheral Focus in having movement of the clefted constituent itself to the left periphery of the embedded clause.

5 Prosody does not match syntax

Summing up what we have discussed so far: we have provided evidence through an experimental study that the prosodic properties of corrective clefts and Focus are the same. Both structures are phrased in two intermediate phrases (focal + postfocal). The focal *ip* bears an LHL pitch accent, which has the same scaling in clefts and focalizations, while the postfocal *ip* has a low and flat F_0 contour.

This is not the case for syntax: in two experimental studies we carried out, we have observed that cleft clauses rather pattern with interrogative wh-items and not with left peripheral Focus. In the first study we have found that while Focus allows for quantifiers, they are strictly banned from cleft clauses, as already discussed in the literature on the basis of non-experimental data. In addition, we have found that Focus is much less embeddable than clefts. Also the behaviour with respect to long distance extraction sets clefts and Focus apart, but this is expected in view of the results with respect to embeddability: if Focus is not easily embedded, it cannot be long extracted out of an embedded clause either.

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24 See Poletto and Pollock (2009) for a justification of the term "disjunction".

In the second syntactic test we have compared three constructions – clefts, Focus and wh-items – with respect to three typical tests used to determine A'-movement, namely parasitic gaps, reconstruction contexts and weak crossover violations. The results of the second syntactic experimental study align cleft clauses rather with interrogative wh-movement than with Focus. This was indeed a surprise, given the widespread idea in the literature that Focus and clefts are equivalent from the pragmatic point of view and also at least partly from the syntactic point of view, since they both involve movement to a CP left peripheral FocusP. We have explained this difference by adopting Frascarelli and Ramaglia's idea that (a) cleft clauses are indeed biclausal and (b) the embedded clause in cleft sentences is actually a free relative, and the relation established with the clefted constituent and the gap in the embedded clause is not a relation of movement. This explains why clefts pattern with wh-movement and not with Focus: the movement across the intervening anaphor is identical to wh-movement, since the embedded clause in clefts is a free relative clause.

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