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Abstract: In this squib I compare the properties of arbitrary plural pro in subject position in Italian with those of the implicit external argument of a 'short passive'. I show that the two types of null arbitrary arguments display the same quantificational variability, but differ crucially with respect to inclusiveness: the arbitrary null subject of an active clause only allows for an exclusive interpretation, i.e. excluding the speaker and hearer(s), whereas the implicit agent of a short passive readily allows for an inclusive interpretation. I hypothesize that this is due to the fact that in active clauses, the null arbitrary subject checks a [person] feature against the phi-complete T probe; in short passives, instead, the null agent, even if syntactically realized – as proposed by Collins (2005) – cannot Agree with a phi-complete probe endowed with [person]: this underspecification explains why its interpretation is not restricted so as to exclude speaker and hearer(s).

Keywords: arbitrary interpretation, passive, implicit arguments, person

1. Introduction

Italian, a null subject language, exhibits two types of external argument (EA) that are both phonologically null and arbitrary in interpretation: the arbitrary null subject of an active clause like (1), and the implicit external argument of a 'short passive' like (2):

(1) Bussano alla porta.  
knock.3.PL at-the door  
‘They are knocking at the door.’

(2) La riunione è stata rinviata.  
the meeting be.3.SG been.F.SG rescheduled F.SG  
‘The meeting has been rescheduled.’

The two phenomena were traditionally considered quite different: as a matter of fact, the arbitrary EA of active clauses has a constrained cross-linguistic distribution, falling within the pro-drop phenomenology\(^1\), whereas the short passive (2) is a cross-linguistically general option.

In the Principles & Parameters framework, it was assumed that only (1) involves a syntactically realized EA, whereas in (2) the agent theta-role is syntactically ‘absorbed’ by

---

\(^1\) For recent discussion of pro-drop, see Biberauer et al. (2010) and Shlonsky (2009).
the passive morphology (Baker, Johnson & Roberts 1989). However, more recent approaches (Collins 2005) claim that even in short passives, the EA is syntactically realized in the usual argument position\(^2\): from this perspective, the EAs of (1) and (2) are less distant than they used to be thought. The question then arises of which properties they share, and which properties may determine their different cross-linguistic distribution.

One obvious move is to think in terms of different types of empty categories (e.g. \textit{pro} in (1) vs. \textit{PRO} in (2)). The current approach to empty categories aims at reducing their properties to differences in internal structure and/or feature specification (Holmberg 2005; Holmberg \textit{et al}. 2009; Landau 2010, \textit{ex multis}); as Landau (2010) stresses, the feature specification of each type of empty category should not be stipulated, but it should follow from independent principles. Thus, a reasonable line of attack is to compare the properties of the EAs in (1) and (2) and try to deduce from them the feature specification of the empty category in the two cases.

Landau (2010), building on Rizzi (1986), distinguishes two types of null arguments on the basis of their degree of ‘syntactic activity’ (i.e. their ability to enter syntactic relations like control, anaphor binding, or the licensing of secondary predicates). Here I will concentrate instead on the intrinsic feature specification of the null EAs in (1)-(2)\(^3\).

\section{Number and animacy}

As first discussed in Cinque (1988), the null EA subject in (1) has the following properties:

i. it triggers plural agreement;
ii. it must refer to human entities;
iii. it cannot refer to the speaker or the hearer (or any group including them);
iv. its interpretation is existential in an episodic sentence, and quasi-universal in a generic sentence.

Cinque (1988) derived properties (i)-(iii) from the following intrinsic feature specification of the arbitrary null pronoun:

\begin{equation}
\text{arb feature specification: } \{ [+\text{human}], [+\text{plural}], [3\text{rd person}] \}
\end{equation}

Consider first the assumed [+plural] feature. In the case of referential pronouns, [+plural] seems to carry the presupposition that the value assigned to the pronoun is a non-atomic entity, i.e. a plurality\(^4\); but such a presupposition would be too strong for the arbitrary null pronoun:

\begin{equation}
a. \text{Suonano alla porta. Deve essere il postino.}
\text{ring.3.PL at-the door. must.3.SG be.INF the postman.}
\text{‘They’re ringing at the door. It must be the postman.’}
\end{equation}

\(^2\) See also Landau (2010) against syntactically unrealized but ‘active’ implicit arguments.

\(^3\) A brief discussion of syntactic activity is reported in the Appendix.

For this reason, Cabredo-Hoffher (2003) proposed that arbitrary pronouns bear an underspecified number feature, which is spelled out as plural. Another possibility is to assume that the arbitrary null pronoun is syntactically specified as [+plural] by a default rule, but this feature value allows for both atomic and non-atomic entities (cf. Sauerland 2003). In referential pronouns, atomic entities are usually filtered out by the competition with [-plural], which restricts the pronoun’s referent to atomic values. More precisely, the filtering effect of the number feature is characterized as a presupposition, and the relevant informativeness principle is Maximize Presupposition:

(5) Maximize Presupposition
The features that appear on a pronoun should be chosen so as to maximize the presupposition they express, so long as no presupposition failure is triggered.

(Schlenker 2004, 177)

In the case of referential pronouns, this principle will force the use of a [-plural] feature whenever the speaker intends to refer to an atomic entity; if the speaker does not choose [-plural], the hearer infers that the truth conditions are not compatible with an atomic value for the pronoun. In this way, atomic entities are not excluded from the semantic contribution of [+plural], but they are filtered out by a pragmatic reasoning based on informativeness.

In the case of the arbitrary null pronoun, the speaker does not intend to refer to a specific atomic entity, hence Maximize Presupposition does not apply. On the other hand, syntactic plurality does not rule out atomic values, and this is why the continuation in (4) is possible.

Concerning the restriction to human beings, Cabredo-Hoffher (2003) proposes that the number feature carries the presupposition that the value of the pronoun is a countable entity, and that countable entities are interpreted by default as referring to humans. In this way, it is not necessary to assume a separate [+human] feature specification.

3. Quantificational variability

As mentioned in point (iv) above, Cinque (1988) noted that the null arbitrary EA of (1) exhibits quantificational variability: in generic sentences like (6), it has a quasi-universal flavour; in episodic sentences like (1) above and (7), it typically has an existential flavour.

(6) [Generic sentence, quasi-universal arb]
Qui, lavorano come matti.
here, work.3.PL like mad.M.PL
‘Here, they work a lot.’

(7) [Episodic sentence, existential arb]
Hanno spostato il tavolo.
have.3.PL moved the table.
‘They moved the table.’

This quantificational variability was traditionally analysed in terms of a ‘Heimian indefinite’ analysis, whereby arbitrary pro gets bound by the unselective quantifier that also
binds the event (or situation) variable in the clause – a generic quantifier in (6), an existential quantifier in (1) and (7) (see Alonso-Ovalle 2001 for discussion and references). However, both Alonso-Ovalle (2001) and Cabredo-Hoffher (2003) point out that in episodic sentences, it is also possible to have a quasi-universal reading. The point was made for Spanish (cf. (8a)), but it carries over to Italian, cf. (8b):

(8) [Episodic sentence, quasi-universal arb]
   a. Ayer en España celebraron el día del trabajo.
      yesterday in Spain celebrated.3.PL the day of-the work
   b. Ieri, in Spagna, hanno festeggiato la Festa del Lavoro.
      yesterday in Spain have.3.PL celebrated the day of-the work
   ‘Yesterday, in Spain, they celebrated the Work Day.’

   Cabredo-Hoffher proposes that in (8), the null EA is not an unselectively bound variable, but it is the covert equivalent of a definite description – essentially equivalent to an impersonal pronoun like English they – referring to a salient maximal set of human entities.

   With respect to quantificational variability, the EA of short passives shows exactly the same behaviour (cf. Malamud 2004, § 4):

(9) [Generic sentence, quasi-universal arb]
   In questo ufficio, le pratiche vengono sbrigate con lentezza.
   in this office, the cases are dealt-with.F.PL with slowness
   ‘In this office, they deal with cases very slowly.’

(10) [Episodic sentence, existential arb]
    E’ stato dato un segnale.
    ‘Somebody gave a signal.’

(11) [Episodic sentence, quasi-universal arb]
    A Roma, il Capodanno è stato celebrato con feste in piazza.
    In Rome the New Year’s Eve has been celebrated with celebrations in street
    ‘In Rome, they celebrated the New Year’s Eve with celebrations in the streets.’

   Note that this parallelism is far from trivial, because other types of arbitrary arguments show a different pattern. In particular, the Italian null object is restricted to generic sentences, where it receives a quasi-universal reading (Rizzi 1986; Landau 2010); this makes it more similar to generic pronouns like German Man or English one.

(12) a. Questo induce _ a concludere quanto segue. [generic]
    this leads to conclude what follows
    ‘This leads to the following conclusion.’

    b. ?? Questo ha indotto _ a concludere quanto segue. [episodic]
    this has led _ to conclude what follows.
Italian arbitrary external arguments in active and passive clauses

(13) a. Gianni fotografa _ seduti.  
   Gianni photographs seated.M.PL  
   ‘Gianni photographs his subjects seated.’

b. *Gianni ha fotografato _ seduti.  
   Gianni has photographed seated. M.PL  

Thus, the behaviour w.r.t. quantificational variability sets apart the EAs of (1)-(2) from the null internal argument in (12)-(13).

4. Inclusiveness

One further aspect of the interpretation of arbitrary arguments concerns their relation to speech act participants. Sigurðsson & Egerland (2009) point out that generic pronouns like one have an inclusive interpretation, whereby the speaker and the hearer are included in the set of individuals that the pronoun introduces; on the contrary, impersonal pronouns like they exclude the speaker and the hearer.

With respect to this property, we can observe a striking asymmetry between the two types of Italian null EAs. As mentioned in point (iii) above, the EA of active clauses has an exclusive interpretation, cf. (14)-(15):

(14) A Roma celebrano il Capodanno con feste in piazza.  
   In Rome celebrate.3.PL the New Year’s Eve with celebrations in streets  
   ‘In Rome, they usually celebrate the New Year’s Eve with celebrations in the streets.’

(15) a. [The manager:] E il direttore?  
    (what about) the director?

b. [The secretary:] Non si preoccupi, lo hanno avvertito.  
    Not REFL worry, CL.3.SG. have.3.PL informed  
    ‘Don’t worry, they informed him.’

(16) [The manager to the secretary:] Hanno spedito il fax?  
    have.3.PL sent the fax?  
    ‘Did they send the fax?’

(14) can only be used by a non-Roman speaker to describe the habits of the inhabitants of Rome. In (15b), the secretary answering the question clearly conveys that somebody other than her informed the director. Similarly, (16) cannot be used by the manager to ask the secretary whether she sent the fax or not.

On the contrary, the null external argument of a short passive has an inclusive interpretation:

(17) A Roma il Capodanno viene celebrato con feste in piazza.  
    In Rome the New Year’s Eve is celebrated with celebrations in streets  
    ‘In Rome, we/they usually celebrate the New Year’s Eve with celebrations in the streets.’

\(^5\) Safir (2004, § 6.1) has a similar observation, but a different analysis.
(18) a. [The manager:] E il direttore? and the director?
b. [The secretary:] Non si preoccupi, è stato avvertito. not REFL worry, has been informed
   ‘Don’t worry, he was informed.’

(19) [The manager to the secretary:] E’ stato spedito il fax? has been sent the fax?
   ‘Has the fax been sent out?’

(20) [Introduction to a volume:] Questo libro è stato scritto per fornire al lettore... this book has been written to give to the reader...
   ‘This book has been written in order to provide the reader with...’

The generic sentence (17) can be uttered by a Rome resident to report the habits of her own city, in sharp contrast to (14); in (18b), unlike (15b), the implicit agent may well be the secretary who utters the sentence: in both cases, the speaker is not excluded from the set of entities that is existentially quantified over. Similarly, in the question (19), unlike (16), the implicit agent may well be the secretary to whom the question is addressed: this shows that the interpretation is also hearer-inclusive. Finally, note that sentences like (20) are routinely used in written texts, where the implicit agent of the passive clause is nobody other than the author himself.

These data lead to following generalization6:

(21) Arbitrary external arguments of active clauses have an exclusive interpretation, whereas arbitrary external arguments of passive clauses have an inclusive interpretation.7

---

6 In terms of Sigurðsson & Egerland’s (2009) typology, reproduced here, the null external argument of active clauses (11)-(13) has the arbitrary interpretation (b), whereas that of short passives may be taken to be ambiguous between two ‘inclusive’ readings: the generic one (a) and the specific one (c):

a. generic: non-restricted +HUMAN reading, i.e., people in general
b. arbitrary: a non-specific +HUMAN reading, excluding the speaker or the hearer
c. specific: a specific +HUMAN reading, referring to a wholly or a partly specific set of individuals, most commonly including the speaker. (Sigurðsson & Egerland 2009, (6))

The authors state that the generic reading is tied to a generic context, whereas the quantificational force of the specific reading (c) is unclear.

7 R. Hinterhölzl (p.c.) points out that short passives are allowed with a [-human] causer as the external argument, cf. (i):

(i) Die Schifahrer wurden verschüttet.
   the skiers were buried (e.g., by the avalanche)

Cases like (i) are known in the literature as ‘event passives’; I leave them aside here.
5. A person asymmetry?

Let us consider how the generalization in (21) may be reformulated in featural terms. The inclusive/exclusive distinction clearly refers to the speech act participants, and therefore, we may try to express it in terms of participant features (in the sense of Harley & Ritter 2002).

This task is not straightforward, especially because of the controversial status of the third person category. According to one influential approach (Kayne 2000; Harley & Ritter 2002; Schlenker 2002, *ex multis*), third person should be simply construed as the lack of participant features. This can be implemented by means of two privative features, [speaker] and [hearer], with the following presuppositional import:

\[
\begin{align*}
\text{[speaker]} &= [\lambda x : c_S \leq i x. x] \\
\text{[hearer]} &= [\lambda x : c_H \leq i x. x]
\end{align*}
\]

where \(c_S\) is the speaker of the context, \(c_H\) is the hearer of the context, \(\leq_i\) is the reflexive relation “being an individual part of” (adapted from Schlenker 2002).

[Int prose: [speaker] denotes an identity function which filters out any value assigned to the pronoun if this value is an entity that does not have as an individual part the speaker of the context. Similarly for [hearer].] 8

Keeping to singular forms, a first person pronoun would be specified as [speaker] and a second person pronoun as [hearer]; third person pronouns, instead, would be completely underspecified. The fact that they cannot refer to either the speaker or the hearer – or, for plural pronouns, to any plurality that includes them – follows from the principle Maximize Presupposition (5), which requires the use of the most specific available form that maximizes the presuppositions expressed (Schlenker 2003, 2004): if the speaker intends to refer to herself or to the addressee, she must use the most specific pronominal form whose presuppositions are satisfied by the intended value of the pronoun (i.e., respectively, a first person and a second person pronoun).

In such an approach, the contrast captured by generalization (18) should follow from the (non)-applicability of Maximize Presupposition:

\[
\text{(23) Arbitrary null EAs of active clauses must obey Maximize Presupposition, whereas arbitrary EAs of short passives are exempt from it.}
\]

But why should the principle draw such a difference? Intuitively, we expect the principle to apply whenever alternative choices of participant features are available for the realization of a given argument. From this perspective, (23) leads to the following conjecture:

\[
\text{(24) Arbitrary null EAs of active clauses can be realized with different participant features, and therefore, the related presuppositions must be maximized. On the contrary, null EAs of short passives cannot be realized with different participant features, and therefore, presupposition maximization is irrelevant.}
\]

8 Following Schlenker (2002), the reflexive relation “being an individual part of” is used to cover both singular pronouns, whose values are atomic entities, and plural pronouns, whose values are either atomic entities or pluralities of which the speaker/hearer is an individual part (cf. §2).
This means that the implicit EA of a short passive is inherently unspecifiable for participant features, rather than being contingently underspecified (resulting in so-called 'third person'). In other terms, in this system it is necessary to distinguish the contingent lack of [speaker] and [hearer] features on an argument – which leads to presupposition maximization, excluding the speaker and hearer – from an inherent lack of participant features, whereby presupposition maximization does not apply.

Suppose instead that we assume two binary, rather than privative, features: [±speaker] and [±hearer]. The positive values will give rise to the same presuppositions as in (19) above; the negative values will give rise to negative presuppositions:

\[
(25) \begin{align*}
[+\text{speaker}] &= [\lambda x: c_S \leq i x. x] \\
[-\text{speaker}] &= [\lambda x: \neg c_S \leq i x. x] \\
[+\text{hearer}] &= [\lambda x: c_H \leq i x. x] \\
[-\text{hearer}] &= [\lambda x: \neg c_H \leq i x. x]
\end{align*}
\]

where, as above, \(c_S\) is the speaker of the context, \(c_H\) is the hearer of the context, \(\leq\) is the reflexive relation 'being an individual part of'.

In this case, third person corresponds to a pair of negatively valued features:

\[
(26) \begin{align*}
&\text{First person: } [+\text{speaker}, [-\text{hearer}]] \\
&\text{Second person: } [-\text{speaker}, [+\text{hearer}]] \\
&\text{Third person: } [-\text{speaker}, [-\text{hearer}]]
\end{align*}
\]

Within such an approach, generalization (18) can be rephrased as follows:

\[
(27) \text{Arbitrary external arguments of active clauses are restricted to values compatible with the features } [-\text{speaker}], [-\text{hearer}]; \text{ arbitrary external arguments of passive clauses are not thus restricted.}
\]

(27) implies that in active clauses, arbitrary EAs are specified for the participant features, whereas in passive clauses they bear no participants features. Thus we can see that, via a different route, we have come to a conclusion that is parallel to that expressed in (24), namely, to an opposition w.r.t. participant features. Whichever version one adopts, the generalization can be restated as in (28):

\[
(28) \text{Arbitrary external arguments of active clauses are specified (or specifiable) for participant features, resulting in an exclusive interpretation; arbitrary external arguments of passive clauses are not.}
\]

6. Licensing person

Hypothesis (28) distinguishes the two types of arbitrary empty category in terms of a different feature specification. Is it possible to derive this difference from independent syntactic conditions?

One possibility immediately comes to mind. In an active clause like (1), the null external argument merged in Spec, vP unproblematically enters an Agree relation with the T head (or more precisely, the C+T complex; cf. Chomsky 2008). Let us assume that this
null argument is a $\phi P$, cf. Holmberg et al. (2009):

\[(29) \quad [T_{\omega\phi} \ldots [v \phi P]_v [v \ VP]]\]

In a short passive like (2), however, the situation is different. Under Collins’s (2005) analysis, we have a structure like (30):

\[(30) \quad TP \rightarrow T' \rightarrow T[\omega\phi]\quad VP \rightarrow be \rightarrow VoiceP \rightarrow PartP \rightarrow Part' \rightarrow [DP \text{the meeting}]_P \rightarrow Part \rightarrow VP \rightarrow PRO \rightarrow V' \rightarrow \text{rescheduled}\]

According to Collins (2005), the null EA is a PRO sitting in Spec,vP, which receives null Case from the higher Voice head. The complement of v is a participial phrase which moves as a whole to Spec,VoiceP, ‘smuggling’ the internal argument past the EA; in the derived position, the internal argument can thus be probed by the T head. As a result, here the arbitrary EA does not enter an Agree relation with T.

The syntactic effects of this Agree relation have been characterized in somewhat different ways, but one crucial effect is that it guarantees the assignment of Nominative Case to the subject. According to Chomsky (2008), T inherits from C a phi-complete probe (including an unvalued person feature), and by Agreeing with the subject, it values the Case feature of the latter as Nominative. According to Pesetsky & Torrego (2007), instead, Nominative Case is the manifestation of an unvalued T feature of the subject, which again receives a value from T. In either case, the Agree relation is necessary in order to license the subject, by valuing an unvalued feature of the latter.

Note that the assumption of an unvalued feature is just a way to express a double
dependency: the T head needs to Agree with an argument, so as to acquire phi-feature values, but the subject too needs to Agree with T9.

The suggestion that I wish to advance is that the crucial ingredient of this double dependency actually consists in the participant features. In other terms, it is the participant features that turn an external argument into an active goal visible for T. The T head needs to Agree with an argument endowed with participant features, and Agrees with the closest one; symmetrically, an external argument endowed with participant features needs to be probed by T.

(31) a. T Agrees with the highest argument that is endowed with participant features.
    b. An external argument endowed with participant features must Agree with T.

Clearly, in the active structure (29) the Agree relation involving the external argument satisfies both (31a) and (31b). In the passive structure (30), clause (31a) is satisfied by the Agree relation that links T to the ‘smuggled’ internal argument; on the other hand, (31b) cannot be satisfied. But then, the external argument of (30) must be devoid of participant features – otherwise, it would necessarily violate (31b)10. This line of reasoning leads to the conclusion that a person-less (and Case-less) external argument does exist: it is the so called ‘arbitrary PRO’ of (30)11.

I therefore propose that the person-less EA of short passives is just a free variable, which only bears a default [+plural] feature and no participant features: accordingly, its potential values (countable human beings) may be either atoms or pluralities, and they may include the speaker or the hearer as an individual part.

On the other hand, the interpretation of this empty category is never truly specific. I assume, following Adger & Ramchand (2005), that only a pronoun fully specified for all phi-features is visible for the assignment function (cf. their I&D feature12). Therefore, the ‘arbitrary’ free variable cannot be directly assigned a value, but it must be existentially or generically bound by an unselective quantifier13. I surmise that apparently specific readings arise via contextual inferences: what is asserted is just an existential quantification, but the context allows an inference as to which value(s) satisfy the open formula. As a matter of fact, such contextual inferences are often overtly expressed, as

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9 The second direction of the dependency corresponds to Vergnaud’s Visibility Condition, whereby arguments must receive Case.

10 This insight is far from novel: the idea that certain arguments are defective w.r.t. the person feature has been around at least since Rizzi (1986).

11 Note that this reasoning is hardly compatible with an analysis in terms of a phonologically null definite description: in fact, such a definite description would be unable to check a structural Case, and the only option would be to stipulate a null Case assigned by Voice. For a criticism of null Case, cf. Sigurðsson (2008).


13 As for the quasi-universal reading in the episodic sentence (11), note that the free variable ranges over a set of atomic entities and larger and larger pluralities, including the maximal plurality of which all the others are an individual part. I surmise that the free variable is existentially quantified, but a pragmatic inference leads to identifying the value as an (almost) maximal plurality. Note also that the clause-initial adjunct ‘in Spain’ contributes to restricting the set over which the variable ranges (i.e., people in Spain): this raises as issue for compositional interpretation that I will not address here.
shown in (4) above, repeated here as (32), and in (33):

(32) Suonano alla porta. Dev’essere il postino.
ring.3.PL at-the door. Must.3.SG be.INF the postman.
‘They are ringing at the door. It must be the postman.’

(33) La donna è stata uccisa in casa. Dev’essere stato il marito.
the woman has been killed.F.SG at home. must.3.SG be.INF been the husband
‘The woman was killed at home. It must have been her husband.’

7. Concluding remarks

In this squib I have compared the null arbitrary external arguments in active and passive clauses, and I have shown that they differ in their specification for participant features. I have then suggested that this difference is syntactically conditioned: only in active clauses can the EA enter an Agree relation with T, which licenses its participant features; in short passives, instead, the EA cannot be probed by T, hence it must be devoid of participant features, which would otherwise remain unlicensed.

The two-way licensing relation hypothesized in (31) is related to an assumption advanced independently in Bianchi (2003, 2006) and Sigurðsson (2004, 2011), whereby participant features must be licensed because they are inherently deictic, i.e., they must be anchored to the speech context; anchoring to the speech context is implemented via a syntactic relation with the C layer. The Agree relation with the finite T head, which inherits from C a phi-complete probe – including participant features – can be seen as a syntactic implementation of the anchoring requirement. Since the external argument of short passives cannot be probed by T+C, it cannot have any participants features anchored to C; therefore, it must be radically unspecified for person.

It is tempting to try to assimilate our distinction between personal and person-less arbitrary null arguments to Landau’s (2010) distinction between strong and weak implicit arguments. In Landau’s terms, strong implicit arguments (specifically, null direct objects as in (12a) and (13a)) are endowed with a D-feature which allows them to be fully active in the syntax, binding self-anaphors and also licensing secondary predicates; on the contrary, weak implicit arguments (like null indirect objects) are syntactically realized but lack the D-feature, and have a lower degree of syntactic activity (this issue is briefly discussed in the Appendix).

However, it does not seem possible to directly equate Landau’s D-feature to our participant features. As already noted, null arbitrary objects are strong in Landau’s sense –

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14 For the first type, the crucial role of T may account for its restricted cross-linguistic distribution; see Holmberg et al. (2009, § 4), who propose that in non-null-subject languages, T bears a phonological EPP feature. This question exceeds the limits of the present discussion.

15 The antecedent is obviously Enc’s (1987) proposal of anchoring tense to C, tense being another deictic feature.

16 Note that the licensing of participant features of the subject by the C+T complex only occurs in finite clauses (while the participant features of other arguments are licensed independently of finiteness). For discussion see Bianchi (2003, 2006) and Adger (2007).
cf. anaphor binding in (34) – but they are apparently not restricted to an exclusive interpretation – cf. the continuation in (34).

(34) La buona musica riconcilia con se stessi.
the good music reconciles with selves.PL
(Quanto meno, per me pro è sempre cosi.)
at least, for me (this) is always so
‘Good music can reconcile one with oneself. At least, for me this is always the case.’

Thus, the strong implicit argument is not specified for participants features.

It is not even possible to equate the participant features to the D-feature proposed by Holmberg et al. (2009) to characterize partial null subject languages. According to Holmberg et al., the D-feature encodes definite reference. In consistent null subject languages like Italian, a null pronoun lacking the D-feature can Agree with an unvalued D-feature borne by T, which is in turn valued by Agreeing with a definite null topic in the C-domain. As a result, the null pronoun can have definite reference.

A null subject instead receives an arbitrary interpretation when either (a) the language has no unvalued D-feature in T, as is the case in partial null subject languages (Brazilian Portuguese, Finnish and Marathi), or (b) the unvalued D-feature in T cannot be valued by a definite null topic, as is presumably the case in Italian sentences like (1). Then, in Holmberg et al.’s approach the arbitrary null EA of active clauses would lack a valued D-feature, but the evidence provided in §4 suggests that it has negative participant features (or it is at least specifiable for privative participant features).

In sum, it is probably safe to assume that definite reference implies both strong activity (in Landau’s sense) and a specification for person; person specification is not a necessary condition for strong syntactic activity of null arguments; it is an open question whether the reverse implication holds.

Be this as it may, the picture that emerges from this discussion is one in which null arguments are endowed with different feature specifications, whose richness depends on the licensing syntactic environment: this is compatible with the general approach of Landau (2010), as well as with the constructivist approach of Sigurðsson (2011).

Appendix: Syntactic activity

Null arbitrary EAs of active clauses, as in (1), behave as full-fledged arguments in various kinds of syntactic relations, including control into complements (35) and adjuncts (36) and the antecedence of the ‘logophoric’ anaphors sé and proprio (37a) as well as the reflexive anaphor se stessi (37b):

Note that in this respect, Holmberg et al.’s D-feature differs from the D-feature as employed by Landau (2010) in his characterization of strong implicit arguments: for Holmberg et al., the D-feature is a referential index and entails definite reference, whereas for Landau it does not.

The differences in feature specification may in turn correspond to different functional layers, in the spirit of Déchaine & Wiltschko (2002), adapted to null arguments by Holmberg et al. (2009), Landau (2010).
(35) Sai cos’è successo? Hanno deciso di PRO anticipare le elezioni.
‘You know what? They decided to anticipate the elections.’

(36) Hanno anticipato le elezioni [per risparmiare sui costi].
‘They anticipated the elections to reduce expenses.’

(37) a. In questo paese regolano i conti da sé/ per conto proprio.
‘In this country, they settle a score by themselves.’
b. Qui, lavorano solo per se stessi.
‘Here, they work only for their own sake.’

On the other hand, the ability of an arbitrary null subject to support secondary predicates is less clearcut. (The sentences are instead fully acceptable if the null subject has a specific interpretation.)

(38) a. ?? Hanno soccorso il ferito [privi delle attrezzature adeguate].
‘They helped the wounded person without adequate equipment.’
b. ?? Hanno occupato l’ambasciata [armati di bazooka].
‘They occupied the embassy armed with bazookas.’

Turning to the EA of short passives, it is known since Manzini (1983) that it has the ability to control:

(39) E’ stato deciso di anticipare le elezioni.
‘It was decided to anticipate the elections.’

(40) Le elezioni sono state anticipate [per PRO risparmiare sui costi].
‘The elections were anticipated to reduce expenses.’

The antecedence of the logophoric anaphors sé and proprio is marginally possible (41):

(41) ? Questi problemi dovrebbero essere risolti da sé/ con le proprie forze.
‘One should solve these problems by oneself.’
As for reflexive anaphors, binding seems significantly degraded:

(42) ?* (Nei regimi dittatoriali), tutto il potere viene attribuito a se stessi.
    in dictatorial regimes, all the power is attributed to selves

However, Loccioni (2012) makes the important observation that binding is more acceptable when the null EA has a generic interpretation than in episodic contexts:

(43) a. Quando tal privilegio viene riservato a se stessi,...
    when such privilege is reserved to oneself[+pl]...

b. * Durante le scorse settimane questo privilegio è stato riservato a se stessi.
    during the last weeks, this privilege has been reserved to oneself[+pl]

(Loccioni 2012, 78, (149))

Notice that the generic interpretation is also shared by arbitrary null objects in Italian, which qualify as ‘strong implicit arguments’ by Landau’s (2010) criteria.

This difference carries over to secondary predicates. Pylkkänen (2008) claims that they cannot be predicated of the EA of short passives, and considers this a decisive argument against the syntactic realization of the EA:

(44) * This letter was written drunk.                                                      (Pylkkänen 2008, 22)

(45) * L’ambasciata è stata occupata [armati di bazooka].
    the embassy is been occupied armed.MPL with bazookas

Again, Loccioni observes that grammaticality improves when the EA has a generic interpretation:

(46) a. ? Queste difficoltà non andrebbero affrontate ?!(da) soli.
    these difficulties not should-be faced (by) alone[+pl]

b. * La disgrazia di ieri è stata affrontata (da) soli.
    the mishap of yesterday has been faced (by) alone[+plur]’

(adapted from Loccioni 2012, 78, (150))

The judgements on these structures are controversial, but it seems fair to say that there is a clear divide between control and logophoric binding on the one hand, and reflexive binding and secondary predication on the other. The former do not discriminate between the two types of EA; the latter instead show an asymmetry, in that the arbitrary EA of active clauses allows for reflexive binding and secondary predication much more easily that the EA of short passives (especially when the latter has a non-generic interpretation). In other terms, the non-generic EA of a short passive seems closer to a ‘weak implicit argument’ in Landau’s sense. However, as already mentioned above in connection with (34) above, weak vs. strong syntactic activity cannot be directly tied to the absence vs. presence of participant (person) features.
References


ORDERING RESTRICTIONS IN THE SYNTAX OF RELATIONAL ADJECTIVES IN ITALIAN

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Abstract: The goal of this paper is to show that in Italian there are ordering restrictions between relational adjectives modifying the same head noun. These ordering restrictions seem to depend on the semantic class relational adjectives belong to. Testing the (un)grammaticality of different orders, a possible hierarchy of semantic relations will be drawn. Both advantages and problems of such a hypothesis will be discussed, showing that an interesting result comes from comparing this hierarchy with other hierarchies proposed to account for ordering restrictions both inside and outside the nominal domain.

Keywords: relational adjectives, complex nominals, semantic relations

1. Introduction

Relational adjectives (hence RelAs) are denominal adjectives that express a relation between the noun from which they are derived and the noun with which they occur, such as geografiche, vinicola and notturno in scoperte geografiche ‘geographical discoveries’, produzione vinicola ‘wine production’, and attacco notturno ‘nocturnal attack’. Noun phrases containing RelAs have been labelled as Complex Nominals (hence CNs) in the literature on English. The term, first used by Levi (1978) (as far as I have found), refers to constructions where the head noun can be modified by either a noun (e.g. autumn rains) or a RelA1 (e.g. autumnal rains).

RelAs are often considered marginal adjectives because they differ from (prototypical) qualifying adjectives (hence QAs) in many respects. RelAs create a relation between two nouns, while QAs assign a property to the noun they modify; RelAs cannot be graded and cannot apparently occur in predicative position, whereas QAs generally can. In Romance languages, RelAs are always postnominal, while most QAs can appear both in the prenominal and postnominal position2.

Regarding RelAs as a class, Bosque (1993) and Bosque & Picallo (1996) do not consider them a homogeneous group: in fact, they divide RelAs into thematic adjectives (henceforth ThAs) and classificatory adjectives (ClAs). ThAs and ClAs differ with respect to the lexical relation they have with the head noun. On the one hand, ThAs absorb a theta role lexically licensed by the noun, as in invasioni barbariche ‘barbarian invasions’ or

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1 Levi (1978) refers to relational adjectives with the label ‘non-predicating adjectives’.

2 Here I will not examine all of the general properties ascribed to RelAs; for a discussion based on cross-linguistic data claiming there is not such a strict dichotomy between RelAs and QAs, see Bisetto (2010).

RGG (2015) 37: 17-34
2. Ordering restrictions

As previously mentioned, RelAs are always postnominal in Italian (and in Romance languages, in general). They are strictly adjacent to the head noun; therefore a QA can precede the sequence formed by the noun plus the RelA (as in (1a)), or follow it, (as in (1b)), but it cannot occur between the noun and the RelA, since (1c) is ungrammatical:

(1)  
(a) una pericolosa invasione francese      ‘a dangerous French invasion’  
    a dangerous invasion French  
(b) un’invasione francese pericolosa  
    an invasion French dangerous  
(c) *un’invasione pericolosa francese  
    an invasion dangerous French

When two (or more) RelAs co-occur in Italian, there are clearly ordering restrictions in unmarked orders⁴:

³ It should be stressed that an adjective is not thematic or classificatory (and not even relational) a priori. Its interpretation can be related to the noun it modifies: the Italian examples below contain an adjective three ways ambiguous, being thematic in (i), classificatory in (ii) and qualifying in (iii):

(i) circolazione sanguigna        (ThA)  
    ‘blood circulation’  
(ii) vasi sanguigni              (ClA)  
    ‘blood vessels’  
(iii) uomo sanguigno              (QA)  
    ‘hot-tempered man’ (lit. blood man)

⁴ I refer to sequences where RelAs are not used contrastively. Generally speaking, when two RelAs are combined, one of the two possible orders appears to be fully acceptable, whereas the opposite one is felt as strongly marginal, even if it cannot be said to be totally ungrammatical, since it can be recovered under constrained pragmatic conditions, as further specified below (footnote 6). This is why this second, marginal, order is marked with the symbol ‘#’ (instead of ‘*’) referring to its inappropriateness in an unmarked context.
Ordering restrictions in the syntax of Relational adjectives in Italian

(2) a. attacco missilistico cubano
    attack missile.ADJ Cuban
b. #attacco cubano missilistico
    attack Cuban missile.ADJ
    ‘Cuban missile attack’

(3) a. invasioni barbariche medievali
    invasions barbarian Medieval
b. #invasioni medievali barbariche
    invasions Medieval barbarian
    ‘Medieval barbarian invasions’

Bosque & Picallo (1996) give an account of similar ordering restrictions of RelAs in Spanish. Concerning the order of ThAs, they claim it depends on the thematic hierarchy, ThAs with a THEME role being closer to the noun than ThAs absorbing an AGENT or POSSESSOR role. This claim is based on examples like (4), where the interpretation of the two RelAs is argued to rely on their position in the sequence:

(4) a. estudios rodoredianos femeninos
    ‘studies of Rodoreda by women’
b. estudios femeninos rodoredianos
    ‘studies of women by Rodoreda’

This analysis works for ordering restrictions of ThAs in Italian, as well. It explains the contrast in (5), where automobilistica can be interpreted only as the THEME and tedesca as the AGENT; the strong marginality of (5b) is due to the fact that the ThA expressing THEME has to precede the ThA with the AGENT role (in unmarked contexts):

(5) a. produzione automobilistica tedesca
    production car.ADJ German
b. #produzione tedesca automobilistica
    production German car. ADJ
    ‘German car production’

Concerning ClAs, the authors state that their order “follows independent patterns of semantic inclusion in successive sub-specifications. A C-adjective strictly adjacent to the head denotes the larger class, being followed by a C-adjective that denotes a sub-class” (Bosque & Picallo 1996, 366), giving the following example:

(6) a. coma alcohólico metílico
    ‘methilic alcoholic coma’
b. *coma metílico alcohólico
    ‘alcoholic methilic coma’

In this way, they manage to account even for those cases in which the order of two co-occurring ClAs seems to be free, as in (7). It is dependent on the fact that the pattern of semantic inclusion is reversible; it is possible to classify the medieval literature with respect
to the place where it was written or to classify the French literature according to the period in which it was written:

(7) a. literatura medieval francesa
    ‘French medieval literature’
    b. literatura francesa medieval
    ‘medieval French literature’

This description seems to account for the distribution of ClAs in Italian, too. The Italian translations of (6) and (7) display the same order. But examples like (8) could be a potential problem, if we try to extend this claim to Italian ClAs:

(8) a. attacco missilistico notturno
    attack missile.ADJ nocturnal
    b. #attacco notturno missilistico
    attack nocturnal missile.ADJ
    ‘night missile attack’

(8a) is the unmarked option, while (8b) sounds ungrammatical to me, unless it is used in a context where a night attack carried out using missiles is countered with a night attack performed by other means (i.e. in a context in which *missilistico* ‘missile’ is used in a contrastive way). This order constraint is not expected, since it seems plausible both to classify night attacks according to the means with which they are carried out and to classify missile attacks with respect to the time in which they take place. Hence, a question arises: why (8a) is grammatical and (8b) is not (or is, at least, rather marginal) in an unmarked context?

Lastly, CNs with a ThA and a ClA will be considered. Bosque & Picallo (1996) state that in Spanish a ClA has to be strictly adjacent to the noun, followed by any ThA, as examples in (9) are claimed to show:

(9) a. unos residuos atómicos soviéticos
    CIA ThA
    ‘some Soviet atomic residues’
    b. una producción manual cestera
    CIA ThA
    ‘a manual production of baskets’

Ramaglia (2008), adopting Bosque & Picallo’s (1996) distinction between ThAs and ClAs, argues that similar ordering restrictions of RelAs do exist in Italian:

(10) a. politica estera italiana
    policy foreign Italian
    CIA ThA
    b. *politica italiana estera
    policy Italian foreign
    ‘Italian foreign policy’
Ordering restrictions in the syntax of Relational adjectives in Italian

The author accounts for the ordering restriction in (10) claiming that *estera*, being a CIA, has to precede *italiana*, which is a ThA. However, this generalization cannot account for Italian sequences in (11):

(11) a. produzione vinicola *italiana annuale*  
production *wine* ADJ Italian annual  
ThA ThA CIA  
‘annual Italian wine production’

b. scoperte *geografiche portoghesi cinquecentesche*  
discoveries geographical Portuguese 16th-century ADJ  
CIA ThA CIA  
‘16th-century Portuguese geographical discoveries’

In (11a) there are two ThAs, *vinicola* and *italiana* (respectively the Theme and Agent of the deverbal noun *produzione*) and a CIA, *annuale*. Both ThAs precede the CIA, showing a distributional pattern apparently different from that of the Spanish examples above. On the other hand, in (11b) the ThA *portoghesi*, which expresses the Agent, is between two Cias, *geografiche* and *cinquecentesche*, which relate the discoveries to the domain of geography and to a certain period of time. I think these examples show that, at least in Italian, if you combine a ThA and a CIA in the same CN, their relative position doesn’t depend on their belonging to the group of ThAs or to the one of Cias.

In the next section I will suggest that ordering restrictions in Italian between ThAs and Cias (and between two RelAs, in general) depend on the semantic relationship they establish with the head noun.

3. The semantic basis of ordering restrictions

The starting point of this study is the observation that, when two RelAs modify the same head noun, there appears to be a strict word order (or at least a preferred one). The working hypothesis I have formulated is that these ordering restrictions are due to the semantic relationship existing between the RelAs and the noun.

In this section, RelAs expressing different semantic relations will be combined to see whether their semantic role influences their position in the sequence. Six relations will be considered: Agent, Theme, Instrument, Time, Location and Matter. The grammaticality judgements regard unmarked contexts where RelAs are not used contrastively.

The relation Matter is used by Rae (2010); it corresponds to Levi’s (1978) about and expresses the topic of something (for example, a demographic policy is a policy about demography, and geographical discoveries are discoveries about geography).

Unmarked contexts have to be taken into consideration, since almost all orders seem to be possible in contrastive environments (the contrasted RelA being necessarily the most external one). (ii) does not sound grammatical under unmarked conditions, but it becomes acceptable if *politica* has a contrastive flavour (meaning the television satire regarding politics and not something else). This is why (ii) is marked with ‘#’, whose use has been already motivated in footnote 4.

(i) *la satira politica televisiva*  
‘the television political satire’
Consider firstly the combinations of Agent with Theme and Matter. Examples (12) and (13) (as well as (5), above), show that, if we combine a RelA expressing Theme with another RelA expressing Agent, the former is closer to the head noun than the latter. Examples (14) and (15) test the position of Agent and Matter: the RelA expressing Matter has to precede the RelA which absorbs the Agent role:

<table>
<thead>
<tr>
<th>Agent</th>
<th>Theme</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(12) esplorazione americana</td>
<td>esplorazione lunare</td>
<td>a. esplorazione lunare americana exploration lunar American</td>
</tr>
<tr>
<td></td>
<td>‘American exploration’</td>
<td>b. #esplorazione americana lunare exploration American lunar ‘American lunar exploration’</td>
</tr>
<tr>
<td>(13) persecuzioni naziste</td>
<td>persecuzioni ebraiche</td>
<td>a. persecuzioni ebraiche naziste persecutions Jewish Nazi</td>
</tr>
<tr>
<td></td>
<td>‘Nazi persecutions’</td>
<td>b. #persecuzioni naziste ebraiche persecutions Nazi Jewish ‘Nazi Jewish persecutions’</td>
</tr>
</tbody>
</table>

→ THEME > AGENT

<table>
<thead>
<tr>
<th>Agent</th>
<th>Matter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(14) politica fascista</td>
<td>politica demografica</td>
<td>a. politica demografica fascista policy demographic Fascist</td>
</tr>
<tr>
<td></td>
<td>‘Fascist policy’</td>
<td>b. #politica fascista demografica policy Fascist demographic ‘Fascist demographic policy’</td>
</tr>
<tr>
<td>(15) scoperte portoghesi</td>
<td>scoperte geografiche</td>
<td>a. scoperte geografiche portoghesi discoveries geographical Portuguese</td>
</tr>
<tr>
<td></td>
<td>‘Portuguese discoveries’</td>
<td>b. #scoperte portoghesi geografiche discoveries Portuguese geographical ‘Portuguese geographical discoveries’</td>
</tr>
</tbody>
</table>

→ MATTER > AGENT

Therefore both Theme and Matter precede Agent. Unfortunately there seems to be no way of combining Theme and Matter to define their reciprocal position in the sequence. The presence of a RelA expressing one of these two relations appears to exclude the possibility of having a second RelA expressing the other. For this reason, I propose the sequence in (16):

(16) N° > THEME/MATTER > AGENT

(ii) #la satira televisiva politica

‘the political television satire’

7 An example like (i) could be seen as evidence of the possible co-occurrence of Theme and Matter:
The next relation to be considered is TIME. Look at examples (17) and (18): they show that RelAs expressing TIME follow RelAs expressing AGENT. It would not be necessary to test the position of TIME with respect to the other semantic relations since they all precede AGENT and for the transitivity rule they should precede TIME, as well. Nonetheless, all the possible combinations have been tested, looking for further evidence for the position of TIME. Examples (19)-(22) confirm that TIME appears to follow THEME and MATTER, too; hence, the sequence proposed can be augmented as in (23), where TIME is the most external relation:

<table>
<thead>
<tr>
<th>AGENT</th>
<th>TIME</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>invasioni</td>
<td>invasions medieval</td>
<td>a. invasioni barbariche medievali invasions barbarian Medieval</td>
</tr>
<tr>
<td>‘barbarian’</td>
<td>‘Medieval invasions’</td>
<td>b. #invasioni medievali barbariche invasions Medieval barbarian ‘Medieval barbarian invasions’</td>
</tr>
</tbody>
</table>

(17) invasioni barbariche ‘barbarian invasions’

(18) proteste giovanili ‘youth protests’

<table>
<thead>
<tr>
<th>THEME</th>
<th>TIME</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>blocco stradale</td>
<td>blocco domenicale</td>
<td>a. blocco stradale domenicale block road.ADJ Sunday.ADJ</td>
</tr>
<tr>
<td>‘roadblock’</td>
<td>‘Sunday block’</td>
<td>b. #blocco domenicale stradale block Sunday.ADJ road.ADJ ‘Sunday roadblock’</td>
</tr>
</tbody>
</table>

(19) blocco stradale ‘roadblock’

(20) abbassamento termico ‘temperature drop’

→ AGENT > TIME

→ THEME > TIME

Unluckily such examples are not clear enough. (i) could be seen as evidence for the order MATTER > THEME under the interpretation ‘the progress of America regarding technology’. However, the same string could be employed to argue in favour of the order THEME > LOCATION since it could also be paraphrased as ‘the progress of technology in America’. Since the order MATTER > THEME would be based on strings whose reading is ambiguous, it is preferable to leave it unspecified.
MATTER

(21) dibattito politico
‘political debate’

TIME

(22) scoperte geografiche
‘geographical discoveries’

MATTER > TIME

(a) dibattito politico postbellico
‘post-war debate’

b. #dibattito politico
‘political debate’

(a) scoperte rinascimentali geografiche
‘Renaissance geographical discoveries’

b. #scoperte rinascimentali
discovers Renaissance.ADJ geographical
‘Renaissance geographical discoveries’

(23) N° > THEME/MATTER > AGENT > TIME

LOCATION will be added to the sequence. Let us start by combining a RelA expressing this relation with another expressing AGENT. In (24) and (25) LOCATION, as with TIME above, appears to follow AGENT. Therefore, it would be unnecessary to test LOCATION’s position with respect to THEME and MATTER; it is expected to follow them, since it follows AGENT. But all the possible combinations will be tested for LOCATION, as well. Examples (26)-(29) provide further evidence in support of an external position for a RelA expressing LOCATION with respect to RelAs expressing THEME or MATTER. But a claim regarding the exact position of LOCATION in the sequence cannot be made without testing its combination with TIME, since both RelAs expressing LOCATION and RelAs expressing TIME follow a RelA which absorbs the AGENT role. On the basis of examples like (30) and (31), LOCATION is argued to precede TIME. The result of these tests is the sequence in (32):

AGENT

(24) manifestazioni studentesche
‘students demonstrations’

LOCATION

(25) sciopero operaio
‘workers strike’

MATTER

(26) circolazione monetaria
‘monetary circulation’

TIME

manifestazioni studentesche romane
‘students demonstrations Roman’

a. manifestazioni studentesche romane
demonstrations student.ADJ Roman

b. #manifestazioni studentesche
‘students demonstrations’

demonstrations Roman student.ADJ

sciopero operaio torinese
‘Turin strike’

a. sciopero operaio torinese
strike worker.ADJ Turin.ADJ

b. #sciopero torinese operaio
strike Turin.ADJ worker.ADJ

‘Turin workers strike’

→ AGENT > LOCATION

‘European circulation’

a. circolazione monetaria europea
circulation monetary European

b. #circolazione europea monetaria

24
Ordering restrictions in the syntax of Relational adjectives in Italian

<table>
<thead>
<tr>
<th>(27)</th>
<th>consumo energetico</th>
<th>consumo domestico</th>
<th>a. consumo energetico domestico</th>
<th>b. consumo domestico energetico</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>‘energy consumption’</td>
<td>‘home consumption’</td>
<td>consumption energy.ADJ domestic</td>
<td>consumption domestic energy.ADJ ‘home energy consumption’</td>
</tr>
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</table>

→ **THEME > LOCATION**

<table>
<thead>
<tr>
<th>(28)</th>
<th>controlli sanitari</th>
<th>controlli aeroportuali</th>
<th>a. controlli sanitari aeroportuali</th>
<th>b. controlli aeroportuali sanitari</th>
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<tbody>
<tr>
<td></td>
<td>‘health controls’</td>
<td>‘airport controls’</td>
<td>controls health.ADJ airport.ADJ</td>
<td>controls airport.ADJ health.ADJ ‘airport health controls’</td>
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<table>
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<th>(29)</th>
<th>crisi demografica</th>
<th>crisi europea</th>
<th>a. crisi demografica europea</th>
<th>b. crisi europea demografica</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>‘demographic crisis’</td>
<td>‘European crisis’</td>
<td>crisis demographic European</td>
<td>crisis European demographic ‘European demographic crisis’</td>
</tr>
</tbody>
</table>

→ **MATTER > LOCATION**

<table>
<thead>
<tr>
<th>(30)</th>
<th>visite serali</th>
<th>visite ospedaliere</th>
<th>a. visite ospedaliere serali</th>
<th>b. visite serali ospedaliere</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>‘evening visits’</td>
<td>‘hospital visits’</td>
<td>visits hospital.ADJ evening.ADJ</td>
<td>visits evening.ADJ hospital.ADJ ‘evening hospital visits’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(31)</th>
<th>escursioni estive</th>
<th>escursioni montane</th>
<th>a. escursioni montane estive</th>
<th>b. escursioni estive montane</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>‘summer hikes’</td>
<td>‘mountain hikes’</td>
<td>hikes mountain.ADJ summer.ADJ</td>
<td>hikes summer.ADJ mountain.ADJ ‘summer mountain hikes’</td>
</tr>
</tbody>
</table>

→ **LOCATION > TIME**

<table>
<thead>
<tr>
<th>(32)</th>
<th>N° &gt; THEME/MATTER &gt; AGENT &gt; LOCATION &gt; TIME</th>
</tr>
</thead>
</table>

Finally, let us add the relation INSTRUMENT to the sequence in (32). Examples (33) and (34) show that a RelA expressing INSTRUMENT precedes a RelA expressing AGENT; thus the position of INSTRUMENT has to be tested with respect to THEME/MATTER, since these relations precede AGENT, as well. Examples (35)-(36) show that INSTRUMENT follows them; consequently, it occupies the position between THEME/MATTER and AGENT. Hence,
INSTRUMENT is expected to precede LOCATION and TIME, which in turn follow AGENT. Examples (37)-(40) confirm such expectation. The final sequence of semantic relations expressed by RelAs in Italian is given in (41):

<table>
<thead>
<tr>
<th>AGENT</th>
<th>INSTRUMENT</th>
<th>Examples</th>
</tr>
</thead>
</table>
| attacco coreano | attacco missilistico | a. attacco missilistico coreano attack missile.ADJ Korean
| esplorazione infantile | esplorazione tattile | a. esplorazione tattile infantile exploration tactile children.ADJ
| stimolazione cardiaca | stimolazione manuale | a. stimolazione cardiaca manuale stimulation hearth.ADJ manual
| proposte contrattuali | proposte telefoniche | a. proposte contrattuali telefoniche proposals contractual telephone.ADJ
| terapia ospedaliera | terapia antibiotica | a. terapia antibiotica ospedaliera therapy antibiotic hospital.ADJ
| trasporto pedemontano | trasporto ferroviario | a. trasporto ferroviario pedemontano transportation railway.ADJ foothill.ADJ

→ **INSTRUMENT > AGENT**

<table>
<thead>
<tr>
<th>THEME</th>
<th>INSTRUMENT</th>
<th>Examples</th>
</tr>
</thead>
</table>
| esplorazione infantile | esplorazione tattile | b. #esplorazione infantile tattile exploration children.ADJ tactile
| stimolazione cardiaca | stimolazione manuale | b. #stimolazione manuale cardiaca stimulation manual hearth.ADJ manual
| proposte contrattuali | proposte telefoniche | b. #proposte telefoniche contrattuali proposals telephone.ADJ contractual
| terapia ospedaliera | terapia antibiotica | b. #terapia ospedaliera antibiotica therapy hospital.ADJ antibiotic
| trasporto pedemontano | trasporto ferroviario | b. #trasporto pedemontano ferroviario transportation foothill.ADJ railway.ADJ

→ **THEME > INSTRUMENT**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>INSTRUMENT</th>
<th>Examples</th>
</tr>
</thead>
</table>
| terapia ospedaliera | terapia antibiotica | b. #terapia ospedaliera antibiotica therapy hospital.ADJ antibiotic
| trasporto pedemontano | trasporto ferroviario | b. #trasporto pedemontano ferroviario transportation foothill.ADJ railway.ADJ

→ **INSTRUMENT > LOCATION**
Ordering restrictions in the syntax of Relational adjectives in Italian

(39) TIME attacco notturno ‘night attack’
    INSTRUMENT attacco missilistico ‘missile attack’

a. attacco missilistico notturno attack missile.ADJ nocturnal
b. #attacco notturno missilistico attack nocturnal missile.ADJ

(40) selezione primaverile ‘spring selection’
    selezione concorsuale ‘examination selection’

a. selezione concorsuale primaverile selection examination.ADJ spring.ADJ
b. #selezione primaverile concorsuale selection spring.ADJ examination.ADJ

→ INSTRUMENT > TIME

(41) N° > THEME/MATTER > INSTRUMENT > AGENT > LOCATION > TIME

4. Interim discussion

The claim at the root of this proposal is that ordering restrictions between RelAs in Italian depend on the semantic relationship they establish with the head noun. Hence, Bosque & Picallo’s (1996) hypotheses on ordering restrictions of RelAs in Spanish can be only partially adapted to Italian syntax.

First, the order of RelAs in Italian has been proved not to be related to their belonging to the group of ThAs or ClAs, despite Ramaglia’s (2008) claims in favour of this approach, in line with Bosque & Picallo (1996). Ramaglia (2008) proposes examples like (10), repeated in (42). She accounts for it arguing that estera, a ClA, is forced to precede italiana, a ThA, being the linear order N > ClA > ThA. It has been shown that such a claim does not hold in Italian (see examples in (11) above). But order (42a) is easily explainable under the present hypothesis, i.e. on the basis of the sequence (41), according to which a RelA expressing MATTER (estera) has to precede a RelA expressing AGENT (italiana):

(42) a. politica estera italiana policy foreign Italian
    (Ramaglia 2008, 38)
b. *politica italiana estera policy Italian foreign
   ‘Italian foreign policy’

Second, ClAs in Italian are not ordered according to patterns of semantic inclusion in successive subspecification: in fact, if example (8) (repeated as (39)) is considered, it is not clear why a RelA expressing TIME should subspecify a RelA expressing INSTRUMENT, but the reverse is not possible. The solution is to abandon the idea of semantic inclusion, claiming that the linearization of ClAs simply follows the sequence in (41).

Cases of (apparent) free order could represent a problem for the present hypothesis. Consider (43), where both orders of RelAs seem to be equally acceptable:
Laura Bortolotto

a. moda parigina primaverile
   ‘spring Parisian fashion’

b. moda primaverile parigina
   ‘Parisian spring fashion’

One possible way to account for an example like (43) is to argue that the same RelA could have different interpretations in the two orders; primaverile ‘spring’ could express TIME in (43a), meaning ‘fashion in Paris in the springtime’, whereas it could express MATTER in (43b), referring to a ‘fashion developed in Paris regarding the springtime’. Considering parigina ‘Parisian’ as constant in expressing LOCATION, the order would be LOCATION > TIME in (43a) and MATTER > LOCATION in (43b), consistent with the hierarchy in (41). Another possible account is related to the possibility for some sequences to be lexicalized; this would obscure the distribution of RelAs. Nevertheless, I do not consider the type of example represented by (43) as a true counterexample to my proposal; I believe the hierarchy in (41) can be assumed for core unmarked cases while the others can be explained by relating them to interfering factors like the one just discussed. Obviously such interfering factors have to be submitted to a subtler analysis in order to strengthen the basis of this hypothesis.

A possible criticism to this analysis could regard semantic relations. In the next section it will be claimed that RelAs are merged in the functional projection they are semantically related to; hence, two important questions should be answered: what and how many are the semantic relations encoded in the functional structure? Semantic relations are themselves a problem, since there is neither agreement on their nature nor on their number. There are different positions on this matter in the literature concerning RelAs: on the one hand, some linguists claim that the number of relations that RelAs can express is potentially unlimited (Mezhevich 2004; Rainer 2013); on the other hand, some authors try to define closed lists of relations available in CNs (Levi 1978; Rae 2010, et al).

I will not analyse semantic relations one by one here since it would imply too long a discussion. Surely the semantic side of the present proposal deserves an in-depth analysis, but it goes beyond the goals of this paper, which aims at showing the plausibility of the hypothesis that RelAs in Italian are ordered according to the semantic relationship they establish with the head noun.

An example of what is intended by interfering factors is in (i)-(ii), where the numbers in brackets represent the results of a Google search (April 5, 2014). (i) shows that only the sequence expected, as outlined in (41) (with the RelA absorbing THEME preceding the RelA expressing AGENT), is attested; there are no cases of the reverse order. But, if the RelA francese ‘French’ is changed with italiana ‘Italian’, some occurrences of the reverse order are obtained. Could there be effects based on frequency (since in Italian it is plausible that Italian productions are more often spoken of)? I admit this is merely speculation, and the question of how to account for these examples remains open.

(i)  
a. produzione vinicola francese
   production wine.ADJ French
   (37) ‘French wine production’

b. produzione francese vinicola
   production French wine.ADJ
   (0)

(ii) a. produzione vinicola italiana
   production wine.ADJ Italian
   (348) ‘Italian wine production’

b. produzione italiana vinicola
   production Italian wine.ADJ
   (12)
In section 5 I will be exploring further evidence supporting the suggestion of ordering restrictions based on a semantic hierarchy, leading to the discovery of some interesting parallelisms in the distribution of modifiers in other languages and domains.

5. Parallel distributional patterns

The idea that adjectives are ordered according to their semantic class is not new. With regard to attributive adjectives, it has a long tradition; Cinque (1994, 2010), Scott (2002) (and references cited there) give a hierarchy of semantic classes of attributive adjectives.

This idea has already been applied to the syntax of RelAs, as well. It was proposed by Rae (2010), who studied ordering restrictions of modifiers in English CNs. The author shows that such modifiers (which can be nouns or RelAs, as mentioned in the introduction) are ordered depending on the semantic relation they express. She combines pairs of CNs with the same head, changing the modifier and the semantic relations involved, as I did in the third section for Italian. From these tests, Rae (2010) obtains a hierarchy of semantic relations, reported in (44):

(44)  MATERIAL > TIME > LOCATION > AGENT/SOURCE > BENEFICIARY > MEASURE > INSTRUMENT > THEME/MATTER > N°

Let us compare Rae’s hierarchy for English CNs with the sequence proposed in (41), and repeated below in (45), explaining the distribution of RelAs in Italian:

(45)  N° > THEME/MATTER > INSTRUMENT > AGENT > LOCATION > TIME

The order of semantic relations common to both hierarchies (put in bold type) is a mirror image. I find this to be a very interesting discovery, which I will try to account for through the cartographic paradigm also undertaken by Rae (2010).

The aim of Cartography is to draw a detailed map of syntactic configurations, focusing on functional projections, in order to ascertain how rich the functional structure of clauses and phrases might be. In particular the cartographic approach assumes that:

the distinct hierarchies of functional projections dominating VP, NP, AP, PP, IP, etc. may be universal in the type of heads and specifiers that they involve, in their number, and in their relative order, even if languages differ in the types of movements that they admit or in the extent to which they overtly realize each head and specifier.

(Cinque & Rizzi 2010, 55)

There are several studies on ordering restrictions of modifiers in the cartographic framework. Cinque (1999) accounts for ordering restrictions of adverbs, postulating that they are base-generated within the specifiers of different functional projections. The heads of such functional projections would host abstract semantic features, such as aspect, tense and modality and adverbs would be merged into the specifier of the functional projection they are semantically related to. This implies that the order of adverbs strictly depends on the hierarchy of functional projections; while arguably universal, this is possibly obscured by cross-linguistic variation regarding internal Merge options, i.e. verb movement across adverbs.
Along the same lines, Scott (2002) has studied ordering restrictions of attributive adjectives in the nominal domain. He argues that, in parallel with adverbs, adjectives occupy the specifier of semantically related functional projections (e.g. ColourP, NationalityP, ShapeP, etc.), with the adjective order deriving directly from the hierarchy of the functional projections itself. In the DP, as in the IP, such universal order can be obscured by instances of internal Merge, i.e. noun movement across adjectives.

In this case the scenario is complicated by the existence of two different types of adjectives, as shown by Cinque (2010): adjectives in direct modification, in the specifier position of functional projections hierarchically ordered, and adjectives which are derived from reduced relative clauses, whose order is free\(^9\). As for adjectives in direct modification, Cinque (2010) proves that there is a unique (universal) hierarchy of functional projections hosting them in the specifier position. The author notes that the order of postnominal adjectives in Romance languages is a mirror image of the order regarding prenominal adjectives in Germanic languages. He argues that the order of prenominal adjectives in Germanic languages reveals the hierarchy of functional projections, and that the mirror image order of postnominal adjectives found in Romance languages can be accounted for by the phrasal movement of the NP with progressive *pied piping* of its modifiers.

This hypothesis works for RelAs, as well. What has been noticed so far is that RelAs are ordered according to their semantic relation both in Italian and English and that the order of postnominal RelAs in Italian is the mirror image of that of prenominal RelAs in English. Their distributional patterns resemble those of other direct modification adjectives. Hence, again the idea is that there is a hierarchy of functional projections whose heads could be argued to contain different semantic features (e.g. TimeP, LocativeP, etc.). RelAs are allegedly merged into the projection to which they semantically correspond, i.e. they enter a certain projection on the basis of the semantic relation they express. The functional hierarchy is disclosed by English RelAs in prenominal position, while Italian postnominal RelAs show a mirror image order due to a NP movement of the *roll-up* type. (47) exemplifies the derivation of the adjective order in (46):

\[(46)\] scoperte geografiche portoghesi cinquecentesche discoveries geographical Portuguese 16\(^{th}\)-century.ADJ ‘16\(^{th}\)-century Portuguese geographical discoveries’

\(^9\) Regarding the latter type of adjectives, see Cinque (2010).
In order to show other interesting parallelisms, two important studies of ordering restrictions of modifiers outside the nominal domain are to be considered. Schweikert (2004, 2005) and Takamine (2010) analyse the order of PPs within clauses, in German and Japanese, respectively. Again, the claim is that, despite an apparent free order, these modifiers obey strict ordering restrictions, since they enter a rigid hierarchy. Both Schweikert and Takamine propose a hierarchy of prepositional modifiers ordered according to their semantic relations. I will not discuss here how they obtained such sequences; for information on testing methods and procedures, see Schweikert (2005) and Takamine (2010). I would like to draw attention to the resulting hierarchies themselves, however, reported in (48) and (49). Let us compare them with Rae’s (2010) hierarchy of modifiers for English CNs and with the hierarchy proposed here for RelAs in Italian, repeated in (50) and (51) respectively:

(48)  EVIDENTIAL > TEMPORAL > LOCATIVE > COMITATIVE > BENEFACTIVE > REASON > SOURCE > GOAL > MALEFACTIVE > INSTRUMENTAL /MEANS/ PATH > MATTER > MANNER
      (Schweikert 2005, 132)

(49)  TEMPORAL > LOCATIVE > COMITATIVE > REASON > SOURCE > GOAL > INSTRUMENTAL/MEANS > MATERIAL > MANNER
      (Takamine 2010, 94)
As Rae (2010) notes, the order she outlined for English modifiers in CNs reflects the order of clausal PPs in German and Japanese, the three hierarchies closely overlapping (even if not coinciding). This further parallelism is striking, since it establishes a correlation across different domains (and languages). The distribution of modifiers in the nominal domain appears to resemble the distribution of modifiers in the clause. I think that such strong similarities could be taken by themselves as evidence that the study of the ordering restrictions of modifiers as outlined in this paper is on the right track.

6. Conclusions

It has been shown that there are ordering restrictions in Italian CNs when two or more RelAs co-occur and that such ordering restrictions seem to depend on the semantic relation which ties the RelA to the head noun. Several examples have been supplied to support this claim; on the basis of this evidence, I have attempted to determine a possible hierarchy of semantic relations. The hierarchy sketched here for RelAs in Italian appears to closely parallel to those proposed by Rae (2010) for modifiers in English CNs and by Schweikert (2005) and Takamine (2010) for PPs in clauses, in German and Japanese respectively. A possible account for the data has been attempted inside the cartographic framework.

Some problems concerning semantic relations have been mentioned and left for future research. The semantic approach to RelAs discussed here certainly has its limits (i.e. great number of semantic relations to be assumed, difficulty in classifying all relations), however the ordering restrictions identified on this basis cannot be ignored. Although a deeper (and comparative) analysis is clearly required, the possibility of parallel accounts for word orders of different types of modifiers could represent another intriguing bridge between the nominal and the clausal domain.

10 There is only one extreme divergence between Rae’s (2010) and Takamine’s (2010) hierarchies. It regards the position of MATERIAL: it is the highest category in Rae’s hierarchy, while it is one of the lowest categories in Takamine’s one. But Rae (2010, 149) notices that the relation considered by Takamine under the label MATERIAL is quite different from hers. The data would not be comparable since Rae (2010, 117) provides examples like steel bridge and plastic timer, whereas Takamine uses this label referring to examples of the type in (i) (that are closer to a MADE UP OF relation or a SOURCE-extracted one, according to Rae 2010, 149):

(i) Taro-ga sake-o kome-kara tsukuru. (Takamine 2010, 53)
Taro-NOM sake-ACC rice-MAT make
‘Taro makes sake from rice’

As for Rae’s (2010) and Schweikert’s (2005) hierarchies, they diverge regarding the relative order of BENEFICIARY and SOURCE. But Rae (2010) admits that she does not have positive evidence in favour of one of the two linearizations and the placement of SOURCE is based on its parallelism with AGENT. The author recognizes that this could be a mistake; hence the different position attributed to SOURCE cannot be used to invalidate the idea of a universal hierarchy of semantic relations capturing ordering restrictions of modifiers both in CNs and in the clause.
References

ELLIPSIS IN ITALIAN SPLIT QUESTIONS

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Università di Siena

Abstract: The goal of this paper is to investigate the syntax of split questions in Italian. Split questions are interrogative structures formed by two parts: a wh-part which corresponds to a standard wh-question and a tag which constitutes a possible answer for that wh-question. Building on previous work by Arregi (2010) I propose that these structures are actually formed by two distinct interrogatives, one of which undergoes ellipsis. This proposal has implications which go beyond the domain of split questions. First, it contributes to a better understanding of ellipsis phenomena. Second, it allows us to deepen our knowledge of the interrogative system in different varieties. Third, it enables us to reconsider some aspects of the interaction between interrogative structures and focus fronting.

Keywords: split questions, ellipsis, focus fronting, fragments, question-answer congruence

1. Introduction

Descriptively, split questions are questions introduced by a wh-phrase with a tag in final position, separated from the preceding material by an intonation break. The use of split questions is attested in colloquial varieties of several languages, among which Italian, Spanish, Catalan, Basque, English and German¹. Examples of split questions in Italian are given in (1):

(1) a. Chi è venuto, Gianni?
   'Who came, Gianni?'
b. Cosa avete mangiato, la pizza?
   'What did you eat, pizza?'
c. Quale hai scelto, quello blu?
   'Which one did you choose, the blue one?'
d. Quanto pesa il tuo pacco, un chilo?
   'How much does your package weigh, one kilo?'
e. Dove vivono, a Roma?
   'Where do they live, in Rome?'f. Quando tornate, sabato?
   'When will you come back, on Saturday?'
g. Come siete arrivati, in treno?

¹Previous work on these structures includes Camacho (2002) and Arregi (2010). Lorenzo (1994), Contreras and Roca (2007) and Lopez-Cortina (2009) deal with the variant construction illustrated in examples (2) for Spanish and Catalan varieties.

RGG (2015) 37: 35-54
‘How did you arrive, by train?’

h. Perché l’hai fatto, per divertimento?
   ‘Why did you do that, for fun?’

Although in all the languages in which this construction is used, any wh-word can seemingly introduce a split question, there are varieties in which split questions are introduced by what or its equivalent regardless of what the question is about. For instance, in the following examples, the wh-word is always realized as what or its equivalent but the intended meaning is that of who, where, when, how old respectively.

(2) a. Qué conoces, a María?
   what (you) know.2.SG. to M.
   ‘Who do you know, María?’
   (Asturian Spanish, Lopéz-Cortina 2009, 14c)

b. Què anirem demà, a la platja?
   what (we) go.FUT.1.PL. tomorrow to the beach
   ‘Where are we going tomorrow, to the beach?’
   (Catalan, Contreras and Roca 2007, 3)

c. Icché parti, domani?
   what (you) leave.2.SG. tomorrow
   ‘When are you leaving, tomorrow?’
   (Fiorentino)

d. What are you, twelve?
   (English, from Closser (2004) by M. Nichols)

The goal of this article is twofold. First, I will discuss the basic properties of split questions in Italian. Building on Arregi’s (2010) proposal, I will argue that split questions are formed by two clauses, a wh-question and a non wh-question which undergoes ellipsis. I will also discuss the properties of the variant construction exemplified in (2c) with respect to the Fiorentino dialect. Second, I will discuss the main aspects of the semantics and pragmatics of split questions in the framework of a cooperative model of conversation (Roberts 1996 and related work).

2. Connectivity effects

The wh-phrase and the tag of a split question show connectivity effects. In all examples reported in (1) above, the tag is intuitively a correlate of the wh-phrase, in the sense that they are interpreted as having the same thematic role and grammatical function. The following examples illustrate the point. When the question is introduced by chi, ‘who’, the tag cannot be, say, a temporal adjunct. Conversely, a question introduced by quando, ‘when’, requires a temporal adjunct as tag.

(3) a. Chi è partito, Gianni*/ieri?
   who is left.M.SG. G./yesterday

b. Quando è partito, *Gianni/ieri?
   when is left.M.SG. G./yesterday
Furthermore, when the wh-phrase is a selected argument, the tag must respect the categorial and lexico-semantic requirements imposed by the selecting predicate as well. This is shown in the following examples. The verb *dire*, ‘say, tell’, selects either a DP or a CP. As (4a) shows, in split questions where it is the verbal argument to be questioned, the tag can be either a DP or a CP, as expected. Example (4b) shows that when the verb selects an inanimate argument, both the wh-word and the tag must be non animate. (4c) shows that when the wh-phrase is selected by a collective predicate, the matching tag can be a morphologically singular DP only if it denotes a group. Finally, (4d) shows that idiomatic readings, in this case *parlare al vento*, lit. to speak to the wind, ‘to waste one’s breath’ are preserved when part of the idiomatic chunk occurs in the tag.

(4)  a. Cosa ti ha detto Gianni, una bugia/che torna domani?  
What to-you.CL has told G. a lie /that (he) comes tomorrow
   ‘What did Gianni tell you, a lie /that he comes back tomorrow?’
 b. Cosa/*Chi fuma Gianni, la pipa?  
what/who smokes G. the pipe
   ‘What/Who does Gianni smoke, the pipe?’
 c. Chi si riunirà alle due, la commissione/*il professore?  
who itself.CL gather.FUT.3.SG. at two the committee / the professor
   ‘Who will gather at two, the committee/*the professor?’
 d. A chi parlo, al vento?  
to who (I) speak.1.SG. to the wind

The wh-phrase and the tag must also have the same morphological case when they are DPs (5 a-c). For instance, in (5a) the wh-word is the object of *premiare*, ‘award’; consequently, the pronoun in the tag must occur in the accusative form. (5b-c) illustrate the same point with examples from Spanish and Basque respectively.

(5)  a. Chi hanno premiato, me/*io?  
who (they) have.3.PL awarded, me/I
   ‘Who have awarded me?’
 b. A quién vio Juan en el parque, a mí/*yo?  
to who saw.3.SG. J. in the park, me/I
   ‘Who did Juan see in the park, me?’ (Spanish, Arregi 2010, 79b)
 c. Se arbola ipiñi ban Jonek, aritze?  
what tree.ABS planted had John.ERG oak.ABS
   ‘What tree did John plant, an oak?’ (Basque, Arregi 2010, 22)

Finally, when the wh-phrase is embedded under a preposition, the tag must be headed by the same preposition.

(6)  a. A chi l’ hai detto, *(a) Maria?  
to who it-CL have.2.SG. told to M.
   ‘To whom did you tell it, to Maria?’
 b. Di chi hai paura, *(di) Giulio?  
of who (you) have.2.SG. fear of G.
   ‘Who are you afraid of, Giulio?’
We will see below that the situation is different in English, a language which allows P-stranding.

3. Ellipsis in split questions

In his analysis of split questions in Spanish, Arregi (2010) proposes that these structures are formed by two separate questions: a wh-question (dubbed ‘the wh-part’) and a non wh-question (the source of the tag) which undergoes ellipsis. For instance, under this analysis, (7a) below is constituted by the wh-question *Chi è venuto?* ‘Who came?’ and the polar question *È venuto Gianni?* ‘Did Gianni came?’ as represented in (7b).

(7)  
\[ (a) \text{ Chi è venuto, Gianni?} \]  
\[ \text{‘Who came, G.?’} \]  
\[ (b) [\text{Chi è venuto?}] [\text{è venuto Gianni}] \]

In the non wh-question (here a polar question but examples will be given below where the tag comes from an alternative question) the XP Gianni is Focus-fronted and the remnant is elided, as shown in (8):

(8)  
\[ \text{Gianni è venuto <Gianni>} \]

Arregi (2010) argues that the main reason to adopt an ellipsis account of split questions comes from the parallel behaviour of tags and other allegedly elliptical structures (in particular fragment answers) with respect to the presence, or absence, of connectivity effects. It is well known that there are connectivity effects between the wh-phrase in a question and the corresponding XP in its full (propositional) answers. Generally speaking,

\[ 2 \]  
Arregi adopts Merchant (2001)’s analysis of ellipsis, according to which non pronunciation is licensed by a semantic condition, identified as e-GIVENNESS. More specifically, Merchant argues that ellipsis is triggered by the feature E, located on a head H, which instructs the PF component not to pronounce the complement of H. Semantically, E denotes a partial identity function over propositions which is defined only if the proposition it combines with is e-GIVEN. In turn, e-GIVENness is defined as follows.

i.  
An expression E is e-GIVEN iff it has a salient antecedent A and, modulo \( \exists \)-type shifting,

(a) A entails F-clo (E), and  
(b) E entails F-clo (A)

where \( \exists \)-type shifting raises expressions to type t by existentially binding unfilled arguments and Focus-closure is the result of replacing Focus-marked parts of an expression with existentially bound variables of the appropriate type.

\[ 3 \]  
In all the examples discussed so far the tag contains only the XP matching the wh-phrase in thematic role, grammatical function and case. Note however that the tag can contain other material in addition to the correlate of the wh-phrase (*Chi arriverà Gianni domani?*, ‘Who will come, G. tomorrow?’) which should involve backward ellipsis. I leave a more systematic investigation of examples of this kind for further research.

\[ 4 \]  
For ellipsis-based accounts of fragment answers, see Brunetti (2004) and Merchant (2004). We will see below that the structural analogy between fragments and tags defended here has a semantic-pragmatic correlate: congruence to a question under discussion in the sense of Roberts (2012).
given a pair of wh-question/answer, the wh-phrase and the corresponding XP in the answer must bear the same thematic role and, when DPs, also the same morphological case. Crucially, the same happens if one replaces the full answer with a fragment. Merchant (2004) takes this to indicate the presence of silent structure in fragment answers; in (9), for example, the fact that the pronoun in the fragment answer requires accusative case, can be naturally interpreted as indicating that it is the direct object of *vedere* ‘see’ in the elided TP.

(9) Q. Chi hanno visto?
   who (they) have.3.PL. seen?
   A. Me/*Io.

The same line of reasoning applies straightforwardly to split questions. Consider the following example (10):

(10) Chi hanno visto, me/*io?
    who (they) have.3.PL. seen, me/*I?

Recall that under the present analysis (10) is formed by *Chi hanno visto? Hanno visto me?* (‘Who did they see? Did they see me?’). The fact that the pronominal DP in the tag bears accusative suggests that it has been generated as the object of *vedere* ‘to see’ in the elided part.

Tags and fragments pattern in a parallel way for the purposes of binding theory as well. In (11a) the tag contains a reflexive which must be interpreted as bound by *Luca*. Conversely, in (11b), the pronoun in the tag cannot be interpreted as bound by *Luca*. Finally, in (11c) the reading in which the null subject of the matrix question is coindexed with the DP in the tag is impossible.

(11) a. Con chi proi ha detto che Luca stava parlando, con se stesso/*i?
    with who (he) has said that Luca was.3.SG. speaking with himself/*i?

b. Con chi proi ha detto che Luca stava parlando, con lui/*i?
    with who (he) has said that Luca was.3.SG. speaking with him/*i?

c. Con chi pro/*i ha detto che stavo parlando, con Luca?
    with who (he/*i) has told that (I) was.1.SG. speaking with Luca.

With fragments we observe an analogous pattern. For instance, the reflexive in the fragment (12b), must be bound by *Luca* in the question, as shown in (12a-b):  

(12) a. Con chi proi ha detto che Luca stava parlando?
    with who (he) has said that Luca was.3.SG. speaking

b. Con se stesso/*i ha detto che stavo parlando, con Luca?
    with himself/*i has said that (I) was.1.SG. speaking with Luca.

Analogous considerations hold w.r.t. Condition B (ex. (13a-b), parallel to (11b)) and Condition C (ex. (14a-b), parallel to (11c)):  

(13) a. Con chi proi ha detto che Luca stava parlando?
    with who (he) has said that Luca was.3.SG. speaking
Connectivity can also be observed with respect to scope phenomena. For instance, in (15) the possessive in the tag can be interpreted as bound by the quantificational subject in ogni studente.

(15) Cosa discuterà, [ogni studente], la sua relazione?
    ‘What will [every student] discuss, his report?’

The same happens in question-fragment pairs (16a-b):

(16) a. Cosa discuterà, [ogni studente]?
    ‘What will [every student] discuss?’

b. La sua relazione.
    ‘His report’.

An alternative possibility to account for these data would be to assume that the tag belongs in the same sentence of the c-commanding wh-phrase, as proposed in Camacho (2002). In a nutshell, Camacho proposes that the wh-phrase and the tag form a constituent at an initial step of the derivation, which should explain why they share the same thematic role and case. The author proposes two alternative technical implementations: the tag is adjunct to the wh-phrase, or the wh-phrase and the tag form a small-clause with the latter being in the Spec of some silent functional head whose complement is the wh-phrase. Be that as it may, at a later step of the derivation, the wh-phrase moves to the left periphery of the clause stranding the tag. Under such hypothesis, in (11a) above the reflexive in the tag could be bound by the c-commanding subject of the embedded clause. On the other hand, the null subject would be too far away to bind it. Condition B would rule out coindexing between Luca and the pronoun in the tag and Condition C coindexing between the DP in the tag and any other referential expression in (11b) and (11c) respectively. In (15a) the bound reading would be possible because the QP ogni studente c-commands the pronoun. Although appealing, this line of reasoning would fail to explain why in some cases connectivity effects are not found. Consider (17):

(17) Chi ha corretto l’articolo di Luca, lui?
    ‘Who has corrected the article of Luca?’

If the analysis developed so far is correct, the tag derives from *Lui ha corretto l’articolo di Luca?*, lit. ‘He has corrected the article of John’, where Condition C should forbid coindexing between the subject pronoun lui and Luca. However, it is well known that in elliptical contexts a referential expression in the elided material can be c-commanded by a coreferential pronoun without inducing violation of Condition C (so called ‘Vehicle
Change’, after Fiengo and May 1994) so that lack of Condition C effects in (17) would come with no surprise. Crucially, Vehicle Change is found in fragment answers as well:

(18) a. Chi ha corretto l’articolo di Luca?
    who has corrected the article of Luca
    b. Lui

On the other hand, in a monoclausal account, the DP l’articolo di Luca should be moved past the postverbal subject to derive the VOS order and there would be no obvious way to prevent lui from c-commanding inside the lower copy of the object DP, inducing a violation of Condition C. One could object that, strictly speaking, if the wh-phrase and the tag form a constituent prior to movement, the pronominal subject in (17) does not c-command the lower copy of the object, because it is contained in a larger constituent. However, the possibility of getting the bound reading in examples like Chi discuterà il suoi articolo, ogni studente? (‘Who will discuss each paper, each student?’), shows that either the lower copy of the wh-phrase or the tag should be able to c-command the lower copy of the object.

4. Word order and Agreement mismatches

We have already seen that the wh-phrase and the tag must bear the same morphological case. For example, in (19) both chi and Leonardo must have accusative case.

(19) a. Chi hai invitato, Leonardo?
    who (you) have.2.SG. invited L.
    ‘Who did you invited, Leonardo?’

In our analysis the fact the chi and Leonardo have accusative is ensured by the fact that both are generated as internal argument of a transitive verb, respectively invitare in the wh-part and invitare in the elided TP (Leonardo(pro)hai invitato <Leonardo>). Now consider the following examples (the intended reading of (20a) is the one with Matteo as subject and chi/Leonardo as object):

(20) a. Chi ha invitato Matteo, Leonardo?
    who has invited M., L.?
    b. Cosa ha portato Sara, la cena?
    what has brought S., the dinner?

If Matteo and Leonardo, and Sara and the dinner, were generated in the same clause, the grammaticality of examples in (20) would be problematic given that in Italian a postverbal subject cannot generally occur between a verb and a direct object:

5 Belletti (2004) proposes that VSO is ruled out by the intervention of the subject DP between the object DP and the (accusative) case checking head, located in some upper position at the edge of the vP. Notice that VSO is possible when the subject is a personal pronoun as in Ho chiamato io la polizia, lit. ‘have called I the police’. This leads Belletti to assume that pronominal subjects can move to a position higher that the Accusative checking position, avoiding intervention in case-checking...
   has invited M. L.

b. *Ha portato Sara la cena.
   has brought S. the dinner

A possibility to make the sentences in (21) acceptable, maintaining VSO, would be to
to (right) dislocate the object, as in (22):

(22) a. L’ ha invitato Matteo, Leonardo.
   him.CL has invited M. L.

b. L’ ha portato Sara, la cena.
   It.CL has brought S., the dinner

Note however that this possibility is not open to Split questions, as the
ungrammaticality of (23a) - in the intended reading - and (23b) shows. This comes with no
surprise under the present analysis: in fact neither the wh-phrase nor, more relevantly, the
tag can be clitic-resumed, which is expected if they undergo A-bar movement (wh-
movement in the wh-question and Focus movement in the polar question).

(23) a. *Chi l’ ha invitato Matteo, Leonardo?
   who him.CL. has invited M. L.

b. *Cosa l’ ha portata Sara, la cena?
   what it.CL. has brought S. the dinner

On the other hand, if Matteo and Leonardo (as well as Sara and la cena) belong in
separate sentences, no word order problems arise and the grammaticality of (20) is readily
explained: the wh-part is a wh-question with the subject in final position, while the DP
interpreted as the object is Focus-fronted in the polar question.

Let us now consider a potential problem for our analysis. As mentioned above, Split
questions can be formed by a wh-question and an alternative question:

(24) Chi è venuto, Gianni o Luca?
   ‘Who came, Gianni or Luca?’

I assume that the structure of the tag in (25) involves the coordination of two sentences;
in each of the disjuncts the correlate of the wh-phrase in the wh-question is focus-fronted
and the TP undergoes ellipsis. This is rendered in (25).

(25) [Chi è venuto?] [Gianni è venuto <Gianni>?] o [Luca è venuto <Luca>?]
Note that mismatches in number and person between the verb in the antecedent (the wh-part) and the verb in the elided TP are possible, as shown in (26a-b).

(26) a. Chi è stato licenziato, Gianni o i suoi colleghi sono stati licenziati?
   ‘Who has been fired, Gianni or his colleagues?’

b. Chi deve parlare, Giulia o Io dovo parlare?
   ‘Who has to speak, Giulia or I?’

However, this is not a problem for our analysis. In fact there are other contexts where TP ellipsis is independently known not to require strict identity between the antecedent TP and the elliptical TP. This is illustrated below with Comparative Ellipsis (Kennedy and Merchant 2000 and related work), which allows mismatches between the φ-features of the overt adjective and those of the elided one (ex. 27a) and “edge coordination” (Bianchi and Zamparelli 2004), that is pseudo-coordination of two DPs by means of a pair of correlative elements, such as a negative particle and an adversative conjunction (27b).

(27) a. Gianni è più alto di Giulia è alta.
   ‘Gianni is taller than Giulia’

b. Non è venuto solo Gianni, ma sono venuti anche i suoi amici.
   ‘Not only Gianni came but also his friends.’

This suggests that we can safely extend the ellipsis-based account of split questions to examples of this kind as well.

5. The tag moves

In the analysis developed so far the tag undergoes left peripheral movement. Capitalizing again on the parallelism between tags and fragments, Arregi (2010) shows that there are some empirical reasons to suggest that this is correct. In this section I will shortly review Arregi’s arguments and show that they can be applied to Italian as well. First, in languages which do not allow preposition stranding like Italian an XP embedded in a PP must pied-pipe the preposition when fronted. Consequently, if the wh-phrase introducing a split question is embedded in a PP, we expect the matching tag to contain the preposition as well. On the other hand, in a language like English which allows p-stranding, the tag should not need to contain the preposition, which could be stranded in the elided TP. Both predictions are borne out:

(28) a. Con chi ha parlato Gianni, *con Chiara?
   with who has spoken Gianni with Chiara
   (Italian)

b. Who did you talk with yesterday, (with) Dave?
   (English)

Cinque (1990, 50-51) observes that in Italian some prepositions like vicino, lontano, accanto, addosso take a PP complement which can be extracted without pied-piping the preposition (29a), something which is impossible with DP complements⁶. Consequently,

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⁶ Cinque attributes to L. Rizzi the observation that PP-extraction can only take place from PP subcategorized by a selecting predicate.
the fact that these prepositions don’t need to occur in the tag of a split question comes with no surprise. In (29b), the PP complement of *accanto* can either move alone stranding *accanto* in the elided IP, or can pied-pipe it.

(29) a. Chiara a cui Gianni è seduto *accanto* …
C. to whom G. is sat.M.SG. next
b. Accanto a chi è seduto Gianni, *(accanto)* a Chiara?
next to who is sat.M.SG. G. next to C.

Another argument in favour of movement of the tag is provided by the distribution of strong and weak pronouns. Given that only the former can be Focus-fronted (Cardinaletti and Starke (1999) among the others), we expect that only strong pronouns can occur in the tag of a split question. Again, this prediction is borne out.

(30) Chi vogliono al telefono te/*ti? who (they) want.3.PL. at the phone you

As well known, the same happens in fragment answers:

(31) Q. Chi vogliono al telefono?
A. Te/*Ti.

Another argument in favour of displacement of fragments is the distribution of the null declarative complementizer CHE (mnemonic for ‘silent *che*’). CHE is not available in displaced CPs, which must be headed by overt *che* (32b) even if CHE/complementizer deletion is allowed when the CP stays in situ (32a). Crucially, when a that-clause occurs as the tag of a split questions, CHE is not admitted either (32c).

(32) a. Tutti pensavano *(che)* avrebbe cambiato idea.
Everyone thought.3.PL. (that) (she) have.COND.3.SG. changed idea
b. *(Che)* avrebbe cambiato idea lo pensavano tutti.
that (she) have.COND.3.SG. changed idea it.CL. thought.3.PL. everyone
c. Cosa pensavano, *(che)* avrebbe cambiato idea?
what (they) thought.3.PL. (that) (she) had.COND.3.SING. changed idea

Unsurprisingly, CHE cannot head CPs which are fragment answers, on a pair with English THAT (Merchant 2008):

(33) Q. Cosa pensavano?
what (they) thought.3.PL.
A. *(Che)* avrebbe cambiato idea.
that (she) had.COND.3.SING. changed idea

Let’s take stock. The parallel behaviour of fragment answers and the tags of split questions with respect to several tests suggests that they should be analyzed in a similar way. Furthermore, given that TP-ellipsis seems to be independently needed to account for other structures (e.g. sluicing, fragments), an ellipsis analysis for split questions seems to be preferred on the theoretical side, all other things being equal. We have also seen that there
are also empirical reasons to prefer an ellipsis approach to Split questions (absence of connectivity effects, word order, mismatches in $\phi$-features between material in the wh-part and its correlate in the elided non wh-part). Finally, we have seen that there is some evidence that the tag is moved to a left peripheral position.

6. Split questions in Fiorentino

Recall that Fiorentino is among those varieties which avail themselves of a special type of split questions in which the question is introduced by the counterpart of what, independently of the content of the tag. The examples in (34) make this clear. As these examples show, (ic)ché ($\text{"what"}$) can replace all wh-words$^8$.

$$
\begin{align*}
(34) & \quad a. \text{Icché è arrivato, Gianni?} \\
& \quad \text{what is arrived.M.SG. G.} \\
& \quad \text{‘Who arrived, Gianni?’} \\
& \quad b. \text{Icché inizia oggi, il campionato?} \\
& \quad \text{what starts today the championship} \\
& \quad \text{‘What starts today, the championship?’} \\
& \quad c. \text{Icché vuoi, quello blu?} \\
& \quad \text{what (you) want.2.SG. that blue} \\
& \quad \text{‘Which one do you want, the blue one?’} \\
& \quad d. \text{Icché vive, a Firenze?} \\
& \quad \text{what (she) lives in Florence} \\
& \quad \text{‘Where does (s)he live, in Florence?’} \\
& \quad e. \text{Icché è partito, ieri?} \\
& \quad \text{what is left.M.SG. yesterday} \\
& \quad \text{When did he leave, yesterday?} \\
& \quad f. \text{Icché andate, in treno?} \\
& \quad \text{What (you) go.2.PL. by train} \\
& \quad \text{How are you going, by train?} \\
& \quad g. \text{Icché costa, solo venti euro?} \\
& \quad \text{What costs only twenty euros} \\
& \quad \text{How much does it cost, only twenty euros?} \\
& \quad h. \text{Icché è stato licenziato, perché era sempre in ritardo?} \\
\end{align*}
$$

$^7$ All speakers I have consulted accept both icché and the reduced form che. Notice that Fiorentino realizes as che also the interrogative complementizer which introduces matrix polar question (and which is in turn homophonous to the declarative complementizer). I will show below that the interrogative pronoun (which I will indicate as ic(ché)) and the complementizer cannot be one and the same item. In the examples I have decided to always use icché (instead of ic(ché)) to improve readability.

$^8$ Apart from adjectival what and which (respectively che and quale). Notice that icché can only be used as a pronoun in standard wh-questions as well (*icché libro stai leggendo ‘What book are you reading?’). Note further that some speakers, included myself, require or strongly prefer that when icché is meant to replace a PP, the governing P must be unpronounced (*?A icché hai parlato, a Gianni? ‘To whom did you speak to, to Gianni?’). However there seems to be some variation and a more systematic investigation is needed.
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What (he) is been fired. M.SG. because (he) was always late
‘Why was he fired, because he was always late?’

Dropping the tag induces agrammaticality in all the previous examples, apart from those cases where icché has its canonical meaning of what/which one. In other words, it is the very presence of the tag to allow this “special” interpretation of the wh-word. In order to account for this fact, I tentatively take icché to be lexically ambiguous between icché1, i.e. the Tuscan counterpart of what, which should always be followed by a silent head THING (à la Kayne (2005)), and icché2, which could instead be compatible with more silent heads (PLACE, TIME, etc.)9. The structure of 34(d) above would thus be something like Icché TIME è partito, ieri?, lit. What TIME (he) is left, yesterday?, with the functional head specifying the range of the variable, among which there is the denotation of the tag. Note that the possibility of interpreting icché as a wh-word different from ‘what’ is not totally unconstrained10.

Although previous work on analogous structures in Spanish adopt a monoclusal approach (see the reference quoted in fn. 1), Fiorentino suggests that a biclausal analysis is to be adopted for this variant as well. If we apply again the tests we used in the previous sections to argue for a biclausal analysis of split questions we get the same results as above. The wh-word and the tag show connectivity effects with respect to thematic role (35a), case (35b), duplication of prepositions in the tag (35c), and binding ((35d), illustrating Condition C effects). On the other hand, Vehicle Change effects are found in split questions in Fiorentino as well, as shown in (35e):

9 I owe this idea to Valentina Bianchi (p.c.).
10 A condition which seems to affect the possibility of realizing the wh-word as icché is the “distance” between it and the matching tag. In all the questions reported below icché is meant to replace chi, ‘who’, and a DP or PP intervene between it and the tag. All the speakers I have consulted judge examples like these very marginal or ungrammatical.

(i)  a.  ?*Icché ha portato la cena, Sara?
     what has brought the dinner S.
    b.  ?*Icché è arrivato ieri, Gianni?
     what is arrived.M.SG. yesterday G.
    c.  ?*Icché si è trasferito a Milano, Gianni?
     what himself.CL. is moved.M.SG. in Milan G.

The same happens if we try to interpret icché as quando (ii.a), dove (ii.b), come (ii.c) or perché (ii.d) in presence of an ‘intervening’ phrase:

(ii) a.  ?*Icché andate al cinema, sabato?
      what (you) go.2.PL. to the cinema Saturday
    b.  ?*Icché porterai Giulio, allo stadio?
      what (you) take.FUT.2.SG. G. to the stadium
    c.  ?*Icché è andata a Roma, in treno?
      what (she) is gone.F.SG. to Rome by train
    d.  ?*Icché sei partito in quel modo, per colpa di tuo fratello?
      what (you) are left.M.SG. in that way for fault of your brother

It is tempting to see this limitation as a kind of garden-path effect, an intuition which I leave for further study.

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Ellipsis in Italian split questions

(35)  
  a. Icché hai invitato, #la macchina
   what (you) have.2.SG. invited the car
  b. Icché hanno visto, me/*io?
   what (they) have.3.PL. seen me/I
  c. Icché l’ hai detto, *(a) Sara?
   what (you) it.CL. have.2.SG. said to S.
  d. Icché proj/*i ha invitato, Luca?
   what (she) has invited L.
  e. Icché l’ ha corretto l’articolo di Gianni, lui?
   what it.CL. has corrected the article of G. he

These data suggest that this variety of split questions should be analyzed along the lines developed in section (3).

I mentioned in fn. (8) that split questions in Fiorentino could be confused with polar questions given that in this variety polar questions can be introduced by the morpheme che, omophonous to the wh-word (ic)ché. The converse case does not occur: it is never possible to realize the particle introducing polar questions as icché. This is clearly shown by the following example:

(36)  
  Che/*Icché dormi?
  that/what (you) sleep.2.SG.

Example (36) shows that (ic)ché cannot replace the interrogative particle (otherwise the sentence should be grammatical given that che is perfect here) and can only mean what (apart from its peculiar use in split questions, which is not at stake here). As such, it cannot occur in (36) given that dormire is an unergative verb. The possible confusion between polar questions headed by che and split questions introduced by (ic)ché may be favoured by the fact that the interpretation of the two structures (which have nonetheless a different intonation) is similar. However, there is compelling evidence that polar questions and split questions have a completely different structure, monoclausal the former and biclausal the latter. Consider the following minimal pair:

(37)  
  a. *(Che)/*Icché hai visto Gianni?
   that/what (you) have.2.SG. seen G.
  b. *(Che)/Icché hai visto, Gianni?
   that/what (you) have.2.SG. seen G.

(37a) is a polar question (‘Did you see Gianni?’), in fact che (an interrogative particle/complementizer) can be omitted and cannot be replaced by icché. On the other hand, (37b) is a split question (‘Who did you see, Gianni?’) and (ic)ché cannot be omitted given that it is the internal argument of vedere. Extra evidence supporting a different

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11 In the remainder of this article I assume that the particle/complementizer che is optional and abstract away from its semantic contribution. Note however the distribution of che is not unconstrained when it interacts with the interrogative particle o which is associated to “non canonical” interrogative interpretation (surprise questions, etc.) Since this issue is orthogonal to our concerns here, I leave it out of the discussion and refer the readers to Botteri (in prep.). See also Garzonio (2005).
analysis for pairs like (37a-b) comes from clitic resumption and island sensitivity. Clitic resumption of the object DP Gianni is possible in the polar question (Che l’hai visto Gianni?), whilst it is never possible to resume the wh-moved XP in a split question, nor in a standard wh-question (Icché (*l’) hai visto, Gianni?) (recall the discussion around (23) above). Furthermore, in both parts of a split question, A-bar movement occurs which, as expected, is sensitive to island constraints (as in *Icché ti dà fastidio il fatto che abbia visto <icché>, Gianni? ‘What bothers you, the fact that I have seen Gianni?’). On the other hand, the complementizer che has no relation with the material inside the island and no island effect arises (Che ti dà fastidio il fatto che abbia visto Gianni?). These arguments clearly indicate that split questions and polar questions have a completely different structure. Interestingly enough, a closely related variety as Sienese seems to always have che in place of icché so that the problem of disambiguating minimal pairs like the one proposed in (37a-b) is still more troubling. Crucially, also in Sienese che can be omitted when it is a particle/complementizer but not when it is an argument12. Keeping this in mind, let’s now consider a related structure attested in Sienese and discussed by Lusini (2013), which is constituted by questions introduced by che and a tensed form of fare ‘do’13.

(38) Che fate andate a Roma?
    what (you) do.2.PL. (you) go.2.PL. to Rome
    ‘What are you doing? Are you going to Rome?’

Although Lusini (2013) analyzes these structures as polar questions headed by che and optional occurrence of fare as a functional, non contentful verb, there is evidence that they should be analyzed as biclausal instead (in fact as pairs formed by a wh-question and a non-wh question with broad focus in the latter)14. First of all, it must be noticed that the morpheme introducing these questions cannot be the interrogative complementizer. We have just seen that che can usually be omitted as a complementizer. As shown by (39), this is not possible in the case at hand.

(39) *(Che) fate andate a Roma?

This can be explained assuming that structures like these are formed by a wh-question with che as the internal argument of fare (which explains why it cannot be omitted) and a non-wh-question. Extra evidence for this hypothesis comes from cross-linguistic comparison. We saw above that Fiorentino realizes the wh-word corresponding to pronominal what as (ic)ché. In all cases of fare insertion, che can be replaced by (ic)ché

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12 As expected, in all the cases in which che is an interrogative pronoun the word-by-word translation in Fiorentino allows icché, which is never case when che is a complementizer. The cliticization and island-sensitivity tests used in the discussion around example (37) apply consistently to Sienese too.

13 The same structure is found also in Fiorentino, modulo the possibility of realising che as icché as we will see in a while.

14 Lusini (2013) observes that in examples like (39), which she calls ‘che fare questions’, fare can combine with verbs which do not assign any thematic role, which should prove that che is not extracted from any clause-internal position (as expected in a monoclausal analysis). However this is questionable given the possibility of questions like Che fa domani? ‘What’s the weather like tomorrow?’ where it is apparent that che is not a complementizer (*Fa domani?).
(40a), which is never possible when che introduces a plain polar question (40b).

(40)  

a.   Icché          fa,          piove?  
what (it)   does (it)  rains
b.   *Icché         piove?\textsuperscript{15}  
what (it) rains

(Fiorentino)

There is another piece of evidence in favour of a biclausal treatment of this type of questions. Like “canonical” (i.e. elliptical) split questions, che-fare questions cannot be embedded, even when che is replaced by se ‘whether’, which usually introduces embedded polar questions.

(41)  

*Non so       che/se                             fate,       andate     a Roma?  
(I)don’t know that/whether (you.2.PL.) do.2.PL go.2.PL. to Rome

In a monoclausal analysis the impossibility of embedding this type of questions should be explained. On the other hand, if this type of questions (as split questions in general) are indeed a sequence of questions, the ban on embedding is readily explained.

7.  The conversational import of split questions

In the analysis defended here, split questions are formed by two questions. Obviously, the fact that questions follow one another in everyday conversations in not a peculiar property of split questions. Following Roberts (2012), which in turn follows Stalnaker (1978), we can think of conversation as a cooperative task in which the speakers try to discover and share with each other information on the world\textsuperscript{16}. In order to achieve this, the speakers usually make use of strategies of inquiry, that is

«sequences of setup moves, or questions, designed to (at least partially) satisfy the aims of the game while obeying the game’s constraints»

(Roberts 2012, 6)

where the game’s constraints are constraints on the speakers’ linguistic behaviour and can themselves be linguistic (e.g. syntax and compositional semantics) or not (involving, for instance, the speakers’ ability to rationally evaluate the goal of the game or cognitive limitations). Particularly relevant for our purposes is the fact that questions can be followed by other logically related questions uttered to simplify the task of answering the question under discussion (QUD), that is the topic of discussion. Let’s try to be more precise. First of all, Roberts adopts the proposition set analysis for the semantics of questions (Hamblin 1973) and much related work) according to which the denotation of a question is a set of propositions. Consider the following example:

\textsuperscript{15} In the intended reading ‘Is it raining?’.

\textsuperscript{16} Ultimately the goal of a conversation is to answer what Roberts calls ‘the Big Question (What is the way things are?). Consequently, all the questions posed in a conversation can be seen as moves made to make this task easier.
(42) What is John reading?

Assuming for simplicity that the restriction of the wh-phrase consists of the following set: \{'Tender is the night, A farewell to arms, To kill a mockingbird\}', the denotation of (42) is the set whose members are the propositions ‘John is reading Tender is the night’, ‘John is reading A farewell to arms’, ‘John is reading To kill a mockingbird’.

(43) \[\{\text{What is John reading?}\} = \{w : \text{John is reading Tender is the night in } w\}, \{w : \text{John is reading A farewell to arms in } w\}, \{w : \text{John is reading To kill a mockingbird in } w\}\]

On a pair with questions, also assertions (i.e. answers to questions) are associated with sets of alternatives which can be generated on the bases of the placement of prosodic focus. Consider the following sentences:

(44) a. John is reading [Tender is the night]$_f$
    b. [John]$_f$ is reading Tender is the night.

In the Alternative Semantics framework (Rooth 1985, 1992 and much related work), a linguistic expression has two semantic values: an ordinary value (its standard denotation) and a focal value which consists of a set of alternative denotations of the same semantic type. The ordinary semantic value of (44a-b) is the proposition that John is reading Tender is the night (type $<$s,t$>$). The focal semantic value can be obtained by substituting for the denotation of the focused constituent the alternative values introduced by focus marking. More precisely, the focus operator introduces a free variable of the type of a set of objects of the same type as the constituent $\alpha$ to which the focus operator attaches (e.g. at the propositional level – type $<$s,t$>$ - the free variable will be of type $<$s,t$>$), which must be a contextually relevant subset of the focus semantic value of $\alpha$, containing both its ordinary semantic value and at least one distinct alternative. Accordingly, the focal value of (44a-b) will be the following.

(45) a. $\{\text{[John is reading [Tender is the night]$_f$]}\}^f = \{p : p = \text{John is reading } x \mid x \in \text{De}\}$
    b. $\{\text{[John]$_f$ is reading Tender is the night]}\}^f = \{p : p = y \text{ is reading Tender is the night } \mid y \in \text{De}\}$

We saw above that the denotation of a question is a set of propositions (type $<$s,t$>$) and that, in the answer, the value of the free variable introduced by the focus operator at the propositional level is also of type $<$s,t$>$. Questions—answer congruence requires that the denotation of the question is the value given to the free variable introduced by the focus operator. Since the free variable must be a subset of the focus semantic value of the subtree which contains the focus-marked constituent, the set of propositions denoted by the question must be a subset of the set of alternative propositions generated by the focus in the answer as well. In our examples, this happens in (45a) but not in (45b). Since the question denotation (43) is a subset of the focus semantic value of (44a), that is, the set of propositions in the form ‘John is reading x’, the latter can be felicitously uttered to answer (42). Consider now (45b). This time, the focal value of the answer is the set whose members are propositions in the form ‘y is reading Tender is the night’ (e.g. ‘Mary is reading Tender is the night’, ‘Dave is reading Tender is the night’, etc.). Here the
congruence requirement between question and answer is not met; that’s why (44b) cannot be uttered as a felicitous answer to question (42).

We can now return to consider logical relations between questions. Consider the following definitions, given by Roberts:

(46) A partial answer to a question q is a proposition which contextually entails the evaluation – either true or false – of at least one element of Q-alt(q).
A complete answer to a question q is a proposition which contextually entails an evaluation for each element of Q-alt(q).\(^{17}\) (Roberts 2012, 11)
A question q\(_1\) entails another question q\(_2\) iff answering q\(_1\) yields a complete answer to q\(_2\).\(^{18}\) (Roberts 2012, 12)

Let’s clarify the entailment relation defined in (46) with an example. Imagine a conversation where the speakers are talking about what John is studying at University. One of the speakers utters:

(47) What is John studying?

Suppose that there are only two possible things for John to study, Syntax or Semantics. In this scenario, giving a complete answer to (47) entails answering to each of the following:

(48) a. Is John studying Syntax?
   b. Is John studying Semantics?

Consequently, according to definition (46), question (47) - the super-question - entails (48a-b) - the sub-questions. Given this, if both the sub-questions are answered, the super-question is answered too and can be removed by the QUD stack\(^{19}\). Maintaining the discussion on this rather informal level, we might say that the sequence constituted by (47) and (48a-b) is a felicitous strategy of inquiry through which the speaker tries to achieve his aim of discovering what John is studying. Imagine now that (49), a split question, is uttered instead:

(49) What is he studying, Syntax?

Under the analysis developed in the previous sections, (49) is formed by the sequence of (50a-b):

(50) a. What is he studying?
   b. [Syntax]< is he studying <Syntax>?\(^{>}\)

The crucial point here is that in (50b) the constituent matching the wh-phrase in (50a) is focus marked. We have already seen that in the framework adopted here, focus marks

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\(^{17}\) Q-alt is the denotation of q under a proposition set analysis.

\(^{18}\) That is, iff every proposition that answers q\(_1\) answers q\(_2\) as well (Groenendijk & Stokhof 1984, 16).

\(^{19}\) Technically, the QUD stack is an ordered set of unanswered questions.
congruence with a question under discussion. Now, what is crucial for our purposes is that the presupposition of prosodic focus in an utterance can be defined independently of whether we are dealing with an assertion or a question.

(51) Given *B, an utterance of B with * a mood variable ranging over interrogative/assertive operators, we can define Presupposition of prosodic focus in an utterance *B as follows:

Presupposition of prosodic focus in an utterance *B
B is congruent to the question under discussion at the time of utterance.

(Roberts 2012, 33)

In (50b), focus on Syntax generates at the clausal level a set of alternative propositions in the form ‘He is studying x’, in the scope of the interrogative operator. The denotation of the wh-question is a set of propositions, which has two members (the propositions ‘John is studying Syntax’ and ‘John is studying Semantics’). Question-question congruence is guaranteed because the question denotation is a subset of the set of alternative propositions generated by the focus in the polar question (i.e. the set of propositions in the form ‘John is studying x | x ϵ De’). In our scenario, question (50a) entails question (50b), and also the alternative propositions generated by the focus. A split question is thus a sequence of questions which constitute a felicitous strategy of inquiry (recall the discussion around the sequence of questions (47) and (48a-b above). Let’s summarize what we have been discussed in this section. A split question can be seen as a sequence of two questions where the question uttered first is the super-question which the speaker tries to answer by posing the second question, a sub-question of the former. The pragmatic contribution of split questions can thus be seen as to make explicit the strategy of inquiry adopted by the speakers. In this sense it can be seen as a move made to ensure that the intentions of the speaker are recognized by the other participants to the conversation.

6. Conclusions

In this article I have argued in favour of an ellipsis account of split questions. Taking into account Italian data, I have discussed evidence already considered in the literature (in particular in Arregi 2010) involving connectivity effects between the wh-word and the tag of a Split Question. I have discussed three extra arguments in favour of a biclausal analysis of these structures: the relative position of argumental DPs, featural mismatches in split questions construed on an alternative question and the properties of the peculiar type of split questions found in Fiorentino. Finally, I have discussed some aspects of the semantics and pragmatics of Split questions, trying to characterize their conversational import.

20 As Valentina Bianchi (p.c.) points out to me even without extending question-answer congruence to question-question congruence, the strategy is felicitous because the wh-question entails the polar question.
Ellipsis in Italian split questions

References


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ON SOM IN SCANDINAVIAN
LONG-DISTANCE A-BAR DEPENDENCIES

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Abstract: This paper investigates previously undiscussed data regarding the distribution of subordinating elements in the left periphery of (long-distance) argument A-bar dependencies in Scandinavian, specifically the distribution of som in restrictive relative clauses and embedded wh-questions. We show that traditional analyses of som in Mainland Scandinavian – which take it to be an expletive-like element that satisfies the EPP and enables subject extraction – cannot adequately account for the distribution of som in long-distance A-bar dependencies. We sketch the outlines of a new analysis according to which som is a complementizer marking A-bar dependencies, and its distribution is sensitive to the interpretability of the features on the CP phase-head(s).

Keywords: Scandinavian, (morpho)syntax, (long-distance) A-bar dependencies, complementizer system, subject/object asymmetries

1. Introduction

This paper presents a comparative study of the distribution of som in the left periphery of (long-distance) argument A-bar dependencies in Mainland Scandinavian1. On the basis of new empirical data, we show that previous analyses of the distribution of som in short A-bar dependencies in Scandinavian, as well as in other comparable language systems, cannot adequately explain the distribution of som in long-distance A-bar dependencies. We sketch

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1 In discussing Mainland Scandinavian, we refer mostly to Norwegian and Swedish (varieties), whereas we address Danish only for comparative purposes. The reason for this is the greater complexity of the Danish complementation system, which would require a long excursion. For the same reason we do not discuss Faroese.
the outline of a new account for the distribution of som in (long-distance) restrictive relative clauses (RCs) and embedded wh-questions (wh-Qs). The distribution of the subordinating element som in Mainland Scandinavian is illustrated below. We take the Swedish examples in (1) and (2) as paradigmatic: som introduces both subject and object RCs, as in (1), and embedded wh-Qs, as in (2).

(1) a. Jag känner mannen *(som) kom hit. [Swedish]
   I know the man the SOM came here
   'I know the man who came here.'
   b. Jag känner mannen (som) Maria ska träffa imorgon.
   I know man the SOM Maria will meet tomorrow
   'I know the man that Mary will meet tomorrow.'

(2) a. Hon undrade vem *(som) kom. [Swedish]
   she wondered who SOM came
   'She wondered who came.'
   b. Hon undrade vem (som) Johan träffade.
   she wondered who SOM Johan met
   'She wondered who John met.'

Based on a fundamental asymmetry in the distribution of som in subject and object A-bar dependencies – i.e. som is only obligatorily present with subject extractions – it has been claimed that som is an expletive-like element that licenses subject extraction (see e.g. Taraldsen 1986, 2001 for Norwegian). Crucially, such an account does not make any prediction concerning the distribution of som in long-distance RCs and wh-Qs, unless some additional assumption is made. Under the additional assumption that som locally checks the subject features in C (see section 2.3 for details), the prediction is that som should always occur in the CP domain of the most deeply embedded clause of long-distance subject A-bar dependencies. However, in this paper we present novel empirical data that show that this prediction is not borne out: in Mainland Scandinavian (i) som cannot occur in the left periphery of the most deeply embedded clause of long-distance subject A-bar dependencies, and (ii) the distribution of som does not display a subject/object asymmetry in long-distance A-bar dependencies. This is shown in examples (3) and (4).

2 In this paper, we are only concerned with wh-Qs and restrictive RCs. Whether or not our tentative analysis can be extended to other types of A-bar dependencies, such as topicalization, cleft and left dislocation structures, can only be determined after collecting a considerable amount of additional data, and thus we leave it for future research.

3 In Norwegian, som cannot be present in embedded object wh-Qs, in contrast to Swedish. See section 2.1 for details.

4 We are primarily concerned with the distribution of som in embedded clauses; see Vangsnes (2005), Westergaard and Vangsnes (2005), and Westergaard et al. (2012) for some discussion on som in root wh-Qs.

5 The data presented in this paper are in part taken from the ScanDiaSyn database and in part collected by the authors through fieldwork sessions funded by the ScanDiaSyn project (see http://uit.no/scandiasyn for details) and the Yggdrasil Programme of the Research Council of Norway.
(3) a. Jeg känner mannen (som) du hoppas (*som) kommer hit.
I know man the SOM you hope SOM comes here
'I know the man you hope will come here.'
b. Jeg känner mannen (som) du hoppas (*som) Maria ska träffa imorgon.
I know man the SOM you hope SOM Maria will meet tomorrow
'I know the man you hope Mary will meet tomorrow.'

(4) a. Hon undrade vem (som) du hoppas (*som) kommer hit.
she asked who SOM you hope SOM come here
'She asked who you said comes here.'
b. Hon undrade vem (som) du hoppas (*som) Maria ska träffa imorgon.
she asked who SOM you hope SOM Maria will meet tomorrow
'She asked who you hope Mary will meet tomorrow.'

This paper offers an overview of the empirical complexity that the Scandinavian data present, and suggests an alternative route for explaining the distribution of *som* in (long-distance) A-bar dependencies. The paper is organized as follows. Section 2 outlines the relevant data and presents the most prominent account of the distribution of *som* in short A-bar dependencies in Norwegian and Swedish, which we call the Expletive Hypothesis. Section 3 presents the novel empirical facts concerning the distribution of *som* in long A-bar dependencies in Norwegian and Swedish, and shows that the Expletive Hypothesis cannot straightforwardly capture these novel facts. Section 4 sketches the outlines of a novel account of the nature, distribution and function of *som* in Norwegian and Swedish. In section 5, we discuss the difference in the distribution of *som* between Norwegian and Swedish. Section 6 summarizes and concludes the paper.

The ScanDiaSyn project was supervised and directed by Peter Svenonius and Øystein Vangsnes at CASTL (Center for Advanced Study in Theoretical Linguistics), University of Tromsø, Norway.

Notice that the distribution of *som* in Swedish (and Norwegian) in the most deeply embedded clause of long-distance A-bar dependencies is different from the distribution of *that* in English, as illustrated in (i)-(ii).

(i) a. I know the man (that) you hope (*that) will come here
b. I know the man (that) you hope (that) Mary will meet tomorrow

(ii) a. She asked who you hope (*that) will come tomorrow
b. She asked who you hope (that) Mary will meet tomorrow.

Whereas both *som* in Swedish (and Norwegian) and *that* in English cannot be present in the most deeply embedded clause of long-distance subject extractions, only in English can *that* be present in the most deeply embedded clause of long-distance non-subject extractions (*that*-trace effect). This fact suggests that Swedish (and Norwegian) is not subject to the same type of restrictions that determine the *that*-trace effect in English. A difference from English is also visible in the distribution of the declarative complementizer *at* in Norwegian. While the distribution of Swedish *at* seems quite similar to that of *that* (i.e. Swedish has an *at*-trace effect), ScanDiaSyn data and additional questionnaire-based surveys (see fn. 5 above) reveal a great variation in the distribution of Norwegian *at* in long-distance A-bar dependencies. Specifically, we identified three varieties of Norwegian (Boef & Franco 2013), one of which displays no *at*-trace effect, and is thus different from English. A discussion of this variation would be out of the scope of this paper. Therefore we leave this issue to future research, but see section 5 on some differences between Swedish and Norwegian.
2. Short A-bar dependencies in Scandinavian

2.1. Data

In this section, we illustrate the distribution of subordinating elements in the left periphery of Scandinavian short A-bar dependencies, specifically restrictive RCs and embedded \textit{wh}-Qs. Scandinavian languages can roughly be divided into two groups: languages that display a subject/object asymmetry and languages that do not. While Norwegian and Swedish belong to the first group, Icelandic belongs to the latter group (Allan et al. 1995, 193; Faarlund et al. 1997, 992; Teleman et al. 1999, 555ff; Thráinsson 2007, 410, 447). Both subject and object RCs in Icelandic are introduced by a specific subordinating form, \textit{sem}, whereas both subject and object embedded \textit{wh}-Qs are merely introduced by a \textit{wh}-element. This is illustrated in (5) and (6) respectively.

\begin{enumerate}
\item \begin{enumerate}
\item \textit{Ég þekki mannninn \textbf{*}(\textit{sem}) kom hingað.} [Icelandic] \\
\text{I know man.the SEM came here} \\
\text{‘I know the man who came here.’}
\item \textit{Ég hata mannninn \textbf{*}(\textit{sem}) Maria ætlar að hitta á morgun.} \\
\text{I hate man.the SEM Maria is.going to meet tomorrow} \\
\text{‘I hate the man that Mary will meet tomorrow.’}
\end{enumerate}
\item \begin{enumerate}
\item \textit{Hún spurði hver \textbf{*}(\textit{sem}) hefði komið.} [Icelandic] \\
\text{she asked who SEM had come} \\
\text{‘She asked who came.’}
\item \textit{Hún spurði hvern \textbf{*}(\textit{sem}) Jón hefði hitt.} \\
\text{she asked who SEM Jón had met} \\
\text{‘She asked who John met.’}
\end{enumerate}
\end{enumerate}

As just mentioned, Mainland Scandinavian languages belong to the first group: the subordinating element \textit{som} is used in both RCs and embedded \textit{wh}-Qs (unlike \textit{sem} in Icelandic), and its distribution shows an asymmetry between subject and object extractions. As the Norwegian and Swedish cases in (7)-(10) illustrate (see also (1)-(2) above), \textit{som} is obligatory with all subject extractions (see (7a), (8a), (9a), (10a)), but optional (see (7b), (8b), (10b)) or ungrammatical (see (9b)) with object extractions. Specifically, in object RCs \textit{som} is optionally present in both Norwegian and Swedish, but in embedded \textit{wh}-Qs Norwegian and Swedish behave differently: \textit{som} is optional in Swedish but ungrammatical in Norwegian embedded object \textit{wh}-Qs, see (10b) vs. (9b).

\begin{enumerate}
\item \begin{enumerate}
\item \textit{Jeg kjenner mannen \textbf{*}(\textit{som}) kom hit.} [Norwegian] \\
\text{I know man.the SOM came here} \\
\text{‘I know the man who came here.’}
\item \textit{Jeg hater mannen \textbf{(som)} Maria skal møte i morgen.} \\
\text{I hate man.the SOM Maria will meet tomorrow} \\
\text{‘I hate the man that Mary will meet tomorrow.’}
\end{enumerate}
\item \begin{enumerate}
\item \textit{Jag känner mannen \textbf{*}(\textit{som}) kom hit.} [Swedish] \\
\text{I know man.the SOM came here} \\
\text{‘I know the man who came here.’}
\end{enumerate}
\end{enumerate}
b. *Jag känner mannen (som) Maria ska träffa imorgon.*
   I know man. the SOM Maria will meet tomorrow
   'I know the man that Mary will meet tomorrow.'

(9) a. *Hun spurte hvem *(som)* kom.*
    she asked who SOM came
    'She asked who came.'
   [Norwegian]

   b. *Hun spurte hvem *(som)* Johan mötte.*
    she asked who SOM Johan met
    'She asked who John met.'

(10) a. *Hon undrade vem *(som)* kom.*
    she wondered who SOM came
    'She wondered who came.'
   [Swedish]

   b. *Hon undrade vem *(som)* Johan träffade.*
    she wondered who SOM Johan met
    'She wondered who John met.'

It is clear that the distribution of *sem* differs considerably from the distribution of *som*: *sem* only occurs in RCs and its distribution is symmetric in subject and object clauses; put differently, the obligatoriness of *sem* in RCs is independent from which argument is being extracted. It is exactly for this reason that we do not discuss Icelandic further.

In the main part of this paper, we refer to Norwegian and Swedish as prototypical Mainland Scandinavian languages. While Danish also displays a subject/object asymmetry in the formation of A-bar chains, it differs from Norwegian and Swedish in that it employs the element *der* in addition to the subordinating element *som*.

(11) a. *Vi kender de lingvister *(der)* vil læse denne bog.*
    we know the linguists there will read this book
    'We know the linguists who will read this book.'
   [Danish]

   b. *Vi kender de lingvister *(der)* han vil besøge.*
    we know the linguists there he will visit
    'We know the linguists who he will visit.'
   (Mikkelsen 2002)

As the sentences in (11) show, the distribution of *der* is restricted to subject extraction contexts (see e.g. Vikner 1991, Mikkelsen 2002); *der* (in *wh*-Qs) has therefore been analyzed as an expletive in SpecIP that satisfies the EPP and licenses subject extraction (cf. Taraldsen 2001; Mikkelsen 2002; and see section 2.3). Notice that *som* may also be used to introduce RCs in Danish, but that its distribution is in part conditioned by the occurrence of *der* (e.g. either *som* or *der* (or both) must be present in a subject RC).

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7 Perhaps the distribution of *sem* in Icelandic is constrained by a requirement that complementizers are spelled-out, see Thráinsson (2007, 443ff).
2.2. Interim summary

The following table sums up the distribution of som in Norwegian and Swedish, where “+” stands for obligatory, “(+)” stands for optional and “−” stands for ungrammatical (or unrealized, see section 5).

<table>
<thead>
<tr>
<th></th>
<th>Norwegian</th>
<th>Swedish</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>subject</td>
<td>object</td>
</tr>
<tr>
<td>short restrictive RC</td>
<td>+</td>
<td>(+)</td>
</tr>
<tr>
<td>short embedded wh-Q</td>
<td>+</td>
<td>−</td>
</tr>
</tbody>
</table>

Table 1: The distribution of som in short A-bar dependencies

As was already mentioned before, and as can be clearly seen in table 1, Norwegian and Swedish differ from each other in the sense that embedded object wh-Qs generally do not permit insertion of som in Norwegian, whereas they do in Swedish. Despite the existence of several proposals explaining the derivation of Scandinavian A-bar dependencies, not many accounts have addressed the variation in the (non-)acceptability of som in non-subject embedded wh-Qs. An exception is Taraldsen (1986, 163-165), who links the contrast between Norwegian and Swedish to the presence of resumptive pronouns in the latter language. In section 5 we return to this difference between Norwegian and Swedish.

2.3. The Expletive Hypothesis

Consider again the subject/object asymmetry in Norwegian embedded wh-Qs in (9), here repeated in (12), in which som is obligatorily present in case of subject extraction, but obligatorily absent in case of object extraction.

    she asked who SOM came  
    ‘She asked who came.’

b. Hun spurte hvem *(som) Johan møtte.  
    she asked who som Johan met  
    ‘She asked who John met.’

On the basis of the asymmetric distribution of som in (12), it has been argued that som in short subject extractions is an expletive-like element that satisfies the EPP and enables subject extraction (on a par with der in Danish, see (11) above; cf. Taraldsen 1986, 2001 a.o. for details). In the remainder of this paper, we refer to this hypothesis as the Expletive Hypothesis. In (12a), som is thus obligatorily present in order to enable extraction of the subject wh-phrase, whereas in (12b), som – being an expletive – cannot be present because it is in complementary distribution with the subject Johan. This is abstractly illustrated in (13).

(13) a. ... [CP WH [IP som ... tWH ... subject extraction

b. ... [CP WH [IP SUBJECT ... tWH ... object extraction

According to this hypothesis, Scandinavian subject-specific som seems to behave like the -i morphology (reminiscent of the expletive pronoun il) on the complementizer que in
French subject-extraction contexts (cf. Taraldsen 2001; Rizzi and Shlonsky 2007); the que/qui-alternation is illustrated in (14).

(14) a. l’homme <\textit{que/qui}> viendra
the man that/who will come
‘the man who will come’

b. l’homme <\textit{que/qui}> j’aime
the man that/whom I love
‘the man that I love’

The Expletive Hypothesis seems to nicely explain the distribution of exclusively subject-specific elements like French qui and Danish der, as well as the obligatoriness of som in Mainland Scandinavian short A-bar dependencies involving subject extraction. Nonetheless, in the next section we show some new pieces of data concerning Scandinavian long-distance A-bar dependencies that cannot straightforwardly be explained by the Expletive Hypothesis.

3. Long-distance A-bar dependencies in Scandinavian

3.1. Data

In this section, we illustrate the empirical facts concerning the distribution of som in long-distance A-bar dependencies in Norwegian and Swedish. The data presented in this section have been obtained through specific questionnaire studies only, since the relevant constructions were not explicitly tested in the ScanDiaSyn project. With the term long-
distance A-bar dependencies we refer to subject and object extractions out of a complement clause of a bridge verb. In (15) (repeating example (3) from above) and (16), the extracted element is the subject (a-sentences) or the direct object (b-sentences) of the most deeply embedded clause. Notice that the presence of *som* in the left periphery of the clause that contains the gap of the extracted argument (i.e. the most deeply embedded clause) is ungrammatical (cf. also Vikner 1991, 119), whereas its presence is grammatical, but not obligatory, in the left periphery of the higher clause, i.e. the RC itself.

(15)  
\begin{itemize}
  \item a. Jeg kjenner mannen (*som*) du sa (*som*) kom hit.  
    I know man.the SOM you said SOM came here  
    ‘I know the man you said came here.’
  \item b. Jeg kjenner mannen (*som*) du sa (*som*) Maria skal møte i morgen.  
    I know man.the SOM you said SOM Maria will meet tomorrow  
    ‘I know the man you said Mary will meet tomorrow.’
\end{itemize}

(16)  
\begin{itemize}
  \item a. Jeg känner mannen (*som*) du hoppas (*som*) kommer hit.  
    I know man.the SOM you hope SOM comes here  
    ‘I know the man you hope will come here.’
  \item b. Jeg känner mannen (*som*) du hoppas (*som*) Maria ska träffa imorgon.  
    I know man.the SOM you hope SOM Maria will meet tomorrow  
    ‘I know the man you hope Mary will meet tomorrow.’
\end{itemize}

Crucially, the ungrammaticality of *som* in the most deeply embedded clause is independent of which argument is extracted. Put differently, the subject/object asymmetry in short A-bar dependencies as presented in section 2 disappears in long-distance A-bar dependencies. Similarly, a symmetric distribution of *som* is attested in long-distance embedded *wh*-Qs as well, as illustrated in (17)-(18) below.

(17)  
\begin{itemize}
  \item a. Hun spurte hvem (*som*) du sa (*som*) kom hit.  
    she asked who SOM you said SOM came here  
    ‘She asked who you said came here.’
  \item b. Hun spurte hvem (*som*) du sa (*som*) Maria skal møte i morgen.  
    she asked who SOM you said SOM Maria will meet tomorrow  
    ‘She asked who you said Mary will meet tomorrow.’
\end{itemize}

(18)  
\begin{itemize}
  \item a. Hon undrade vem (*som*) du hoppas (*som*) kommer hit.  
    she asked who SOM you hope SOM come here  
    ‘She asked who you said comes here.’
  \item b. Hon undrade vem (*som*) du hoppas (*som*) Maria ska träffa imorgon.  
    she asked who SOM you hope SOM Maria will meet tomorrow  
    ‘She asked who you hope Mary will meet tomorrow.’
\end{itemize}

As can be seen by the pattern in (17), *som* in Norwegian is ungrammatical after the *wh*-element in long-distance embedded *wh*-Qs, unlike short subject *wh*-Qs, cf. (9a). Swedish, instead, optionally allows *som* to linearly follow the *wh*-element in both subject and object long-distance embedded *wh*-Qs. This difference between Norwegian and Swedish neatly reflects the difference attested in short object embedded *wh*-Qs in these two languages, i.e.
the distribution of *som* is more restricted in Norwegian. We come back to this difference in section 5.

3.2. Problems for the Expletive Hypothesis

The Expletive Hypothesis seems to properly account for (a part of) the distribution of *som* in Mainland Scandinavian short A-bar dependencies (see section 2.3). As could be seen in (15)-(18), the distribution of *som* in long-distance A-bar dependencies does not reflect a subject/object asymmetry. Since the Expletive Hypothesis does not explicitly address long-distance A-bar extractions, further assumptions are needed for it to make predictions about the distribution of *som* in these syntactic contexts.

First, let us assume that *som* is an expletive that licenses subject extraction *locally* (Assumption A). With this additional assumption, the Expletive Hypothesis fails to account for the facts: *som* is predicted to occur in the clause from which the subject is extracted, *quod non*. Put differently, *som* is predicted to obligatorily introduce the most deeply embedded clause in long-distance subject extractions, on a par with *qui* in French and *der* in Danish. In the French long-distance RCs in (19), the distribution of *qui* is analogous to its distribution in short RCs (cf. (14)), i.e. *-i* truly behaves as an expletive. The same holds for Danish *der*. The example in (20) shows a long-distance subject RC, in which *der* occurs in the lower clause that is introduced by the declarative complementizer *at*.

(19)  

a. *l’homme que tu penses* <*que/qui*> viendra  
   the man that you think that/who will come  
   ‘the man you think will come’

b. *l’homme que tu penses* <*que/qui*> j’aime  
   the man that you think that/whom I love  
   ‘the man you think I love’

(20)  

Venner (som) han påstod at *der* havde lånt bogen var forsvundet.  

friend.the SOM he claimed that there had borrowed book.the was disappeared  
‘The friend that he claimed had borrowed the book has disappeared.’  
(Engdahl 1985, 21)

If we compare the French examples in (19) with the Scandinavian examples in (15)-(16), it is evident that *som* has a different distribution from French *qui*. The Expletive Hypothesis enriched with Assumption A thus cannot capture the distribution of *som*.

---

11 Similarly, (i) shows a long-distance subject *wh-Q*, in which *der* occurs in the most deeply embedded clause (while *som* cannot occur there).

(i) *Jeg ved ikke hvem du tror* <*der/som*> har gjort det.  
   ‘I do not know who you think has done it’  
   (Vikner 1991, 119)

12 Interestingly, preliminary data from a pilot study on the distribution of *som* and *der* in Danish suggest that speaker grammaticality judgments show variation with regard to the distribution of *der*. Specifically, a number of speakers do not accept *der* in the most deeply embedded clause of long-distance subject A-bar dependencies. Since these data await further validation through careful empirical research, we leave the issue of variation in the distribution of *der* for future work.
Alternatively, as suggested to us by an anonymous reviewer of a previous version of this paper, one can assume that *som* licenses subject extraction in short A-bar dependencies, whereas in long-distance A-bar dependencies the C head in the most deeply embedded clause has properties such that it permits SpecIP not to be projected (Assumption B). Specifically, if one follows Rizzi and Shlonsky (2007), the subject position does not need to be projected when Fin⁰ (i.e. the lowest C head) contains an element that satisfies the Subject Criterion (see footnote 7). Thus, one might say that a clause embedded inside a relative or interrogative clause may have a Fin⁰ of the required type for the subject position not to be projected, while the Fin⁰ of the relative or interrogative clause itself cannot be of the required type (for reasons that are yet unknown). Even though the Expletive Hypothesis enriched with Assumption B would correctly predict that *som* cannot be present in the most deeply embedded clause of long-distance subject A-bar dependencies, we do not believe it to be insightful for the following reasons. First, following Rizzi and Shlonsky (2007), the element in Fin⁰ that satisfies the Subject Criterion encodes nominal uninterpretable features. Rizzi and Shlonsky take French as an example, in which the complementizer lexicalizes the nominal uninterpretable features of Fin⁰ with the -i morphology (see (14) and (19) above). To extend this analysis to Norwegian and Swedish, one would need to assume that in those languages Fin⁰ in the most deeply embedded clause encodes nominal uninterpretable features, and that these features lack a phonetic matrix in long-distance A-bar dependencies. Independent motivation for assuming that the subject position is not projected only in the most deeply embedded clause in long-distance A-bar dependencies in Norwegian and Swedish is however missing. Second, and this holds more generally for any version of the Expletive Hypothesis, the mere occurrence of *som* in the left periphery of object A-bar dependencies remains unexplained under the assumption that *som* is an expletive. Put differently, following any version of the Expletive Hypothesis one is forced to say that there are two different instances of *som*: (i) an expletive-like element that obligatorily shows up in short subject extractions and (ii) an instance of *som* (potentially an operator-like element, as proposed by Taraldsen 1986, cf. footnote 8) that optionally shows up in short object A-bar dependencies (and in the higher clause of long-distance subject A-bar dependencies). In sum, the Expletive Hypothesis in combination with either Assumption A or Assumption B cannot adequately account for the distribution of *som* in Norwegian and Swedish.

Table 2 sums up the facts presented so far.

<table>
<thead>
<tr>
<th></th>
<th>Norwegian</th>
<th></th>
<th>Swedish</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>subject</td>
<td>object</td>
<td>subject</td>
<td>object</td>
</tr>
<tr>
<td>short restrictive RC</td>
<td>+</td>
<td>(+)</td>
<td>+</td>
<td>(+)</td>
</tr>
<tr>
<td>long restrictive RC, high clause</td>
<td>(+)</td>
<td>(+)</td>
<td>(+)</td>
<td>(+)</td>
</tr>
<tr>
<td>long restrictive RC, low clause</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>short embedded wh-Q</td>
<td>+</td>
<td>–</td>
<td>+</td>
<td>(+)</td>
</tr>
<tr>
<td>long embedded wh-Q, high clause</td>
<td>–</td>
<td>–</td>
<td>(+)</td>
<td>(+)</td>
</tr>
<tr>
<td>long embedded wh-Q, low clause</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Table 2: The distribution of *som* in (long-distance) A-bar dependencies

The crucial observation for the alternative account of the distribution of *som* that we sketch in this paper is that in long-distance embedded A-bar dependencies *som* is ungrammatical in the clause from which the argument is extracted, as can be seen in table...
2. As mentioned before, this observation basically indicates that som cannot be an expletive element licensing subject extraction. Moreover, table 2 shows that som is optional in a number of contexts, namely when it introduces a short object A-bar dependency (RCs in both Norwegian and Swedish and embedded wh-Qs in Swedish) and when it introduces the higher clause of a long-distance A-bar dependency (RCs in both Norwegian and Swedish and embedded wh-Qs in Swedish).

4. Towards an analysis

In this section, we first discuss the nature of som in RCs and embedded wh-Qs from a comparative and diachronic perspective (section 4.1), and then we discuss the distribution of som in (long-distance) A-bar dependencies (section 4.2). In section 4.3, we sketch the outlines of a new analysis according to which som is a complementizer marking A-bar dependencies.

4.1. The nature of som from a comparative and diachronic perspective

The element som that introduces RCs and may occur to the right of a wh-expression in wh-Qs also functions as a marker for the standard in (generic) equative and similative clauses (in the sense of Haspelmath and Buchholz 1998; Hendery 2012). A ‘standard marker’ is for instance the second as in a sentence like Mary is as pretty as my sister, where my sister is the standard to which what is technically called ‘the parameter’ (i.e. the predicate, pretty in the example above) refers. In (21) we give some examples of this use of som in Scandinavian.

(21) a. Min søster er like pen som dig. [Norwegian]
   ‘My sister is as pretty as you.’
   b. Hon skriver som hennes bror talar. [Swedish]
   ‘She writes like her brother talks.’

(Haspelmath and Buchholz 1998, 294, 320)

Brandner and Brauning (2013) argue convincingly that the semantics of the equative particle is well suited for its function in RCs. This fits with their claim that the RC particle wo in modern Upper German dialects (and so in older stages of German, and most prominently in the Upper German regions) evolved out of the equative particle so. Specifically, Brandner and Brauning argue that both equatives and RCs contain a (hidden) conjunction13, as illustrated below.

13 In a footnote, Faarlund (2004, 264) observes that “Even the word ok ‘and’ has been interpreted by some scholars (e.g. Christoffersen 2003) as a relative particle in sentences such as

(i) Þar er garðr hjá ok heitir Haugsgarðr [Old Norse]
   ‘There is a farm nearby which is called Haugsgard’ (Laxd 68.20)
There is however no need for such an interpretation, given the rather free deletion of subjects in coordinated sentences (…).” This means that a clause like (i) can alternatively be analyzed as two
On *Som* in Scandinavian Long-distance dependencies

(22)  
   a. *Hans läuft (so) schnell wie der Wind.*  
    Hans runs (so) fast as the wind
    ‘Hans runs as fast as the wind.’ 
   b. Hans’ running has a rapidity (=x) **and** the wind has a rapidity (=y),
      whereby *wie* states that x=y (Brandner and Brauning 2013, 147)

(23)  
   a. *Des Buech wo ich g’lese ha liit uff em Tisch.*  
    the book PRT I read have lies on the table
    ‘The book that I read lies on the table.’ 
   b. x is a book **and** I read something (=y), whereby so/wo states that x=y
      (Brandner and Brauning 2013, 147-148)

In this perspective, the interpretation of equatives and RCs is rather similar: both contain a conjunction and an equation (either an equation between properties, as in (22), or an equation between the elements for which the properties hold, as in (23)); notice that it is precisely the equation in RCs (23b) that connects the gap inside the RC to the RC head in the matrix clause. Moreover, other scholars have observed a similarity in the pragmatic function of equatives and RCs, in that they both serve to “anchor a referent in discourse by giving additional information about the referent” (Bužarovska 2005, 95). A further fact in support of the correlation between equatives and RCs is that *som* is also used as a role marker, i.e. a marker of the syntactic role to which the subject or object predicative phrases refer (e.g. *I am asking you for this as your mother*). This function seems to be a later development from its function as a generic equative (Haspelmath and Buchholz 1998, 321-323). The similarity between role phrases and RCs can be seen in their function: a role phrase is a type of secondary predicate of a nominal, and a RC is a type of predication that modifies a nominal (see also section 4.2). If the above characterization of equatives and RCs is on the right track, it should come as no surprise that the equative marker can be used to introduce RCs.

Following this line of reasoning – i.e. *som* is not an expletive, but rather a complementizer (cf. Thráinsson 2007, 407ff) (derived from the equative marker 14) – we can main coordinated clauses, the second of which has a null subject that is deleted under identity with the noun in the first clause. This observation suggests that there is at least an interpretive similarity between coordinated clauses and RCs.

14 Haspelmath and Buchholz (1988, 288) propose the exact opposite, namely that equative markers derived from RC markers. They propose that correlative equative constructions derive from correlative free relative clauses (FRCs) through elision of redundant material (i.e. everything except the standard marker), as illustrated in (i).

   (i)  
    *Ich bin so alt [wie du <alt bist>]*  
    *I am so old how you old are*  
    ‘I am so old as you’

However, Hendery (2012, 93ff.) argues convincingly that such a proposal encounters a problem with respect to clause ordering. Specifically, it predicts that correlative FRCs, as in (ii), show the same clausal ordering of correlative equative constructions, but “in the typical correlative RC, the relative clause precedes the main clause”, see (iii).

   (ii)  
    *Wer das weiss, der bekommt einen Preis.*  
    *who that knows, he gets a prize*  
    ‘Whoever knows that will get a prize.’
account for why *som* may be used in equatives/similatives as well as in RCs (see also Vangsnes 2005, 211 on the functions of *som*). The fact that *som* became a RC marker could be explained under the hypothesis that both in equatives/similatives and in RCs *som* introduces a clause that contains a variable (the trace left behind by A-bar movement) that is bound by an operator (OP), i.e. an OP-variable dependency. The antecedent of the OP is some information that is provided in the main clause, which embeds the clause that is introduced by *som*. The element *som* can thus be seen as a general marker of A-bar dependencies, which via a diachronic process of function extension began to introduce various clause types that share information with the main clause (cf. Hendery 2012, 97 and references cited therein).

In equatives and similatives, the OP has a predicate, an adjective or a property of some sort as antecedent, whereas in RCs the antecedent of the OP is typically a nominal. We therefore propose that *som* lexicalizes a C head that bears an OP feature: [OP]. In section 4.2 we illustrate the derivation of A-bar dependencies.

Diachrony seems to support the analysis of *som* as a complementizer that marks A-bar dependencies (i.e. OP-variable dependencies). Already in Old Norse, RCs were introduced by the equative particle *sem* (24), which was also used as a comparative particle (25) – being “a derivative of the same root as the adjective *samme* ‘same’ (Old Norse *samr*), and thus cognate with English *same*, Latin *simul-*, Greek *homos*” (Vangsnes 2004, 23; see also Faarlund 2004).

(24) 15 *allum guðs vinum ok sinum þeim som þetta bref sjá eðr heyr*  
all god friends and his.REFL those SEM this letter see.3P or hear.3P
‘To all God’s friends and those of his own who see or hear this letter’  
(DN 11.4 quoted after Faarlund, 2004, 259)

(25) *svá þróttaust folk som þetta er*  
so powerless people SEM this is
‘Powerless as this people is’  
(Fbr 213.17 quoted after Faarlund, 2004, 266)

The Handbook of Nordic Languages reports that during the Old Norse classical period *sem* (*‘as’*) began to replace *er* – a complementizer that was used in RCs 16. Up to that time...
moment, *sem* was used mainly in comparative clauses (Bandle et al. 2005, 1160) and was originally more frequent in Old Norwegian texts (Lindblad 1943, 113; cf. Faarlund 2004, 259). By contrast, its cognate *sum* is only mentioned a few times in the earliest Swedish inscriptions (Lindblad 1943, 114, cf. also Delsing 2001), and there is no evidence for *sem/sum* or any cognates in RC marking in early Danish runic material or in the older Edda poetry. This brought various researchers to the conclusion that *sem* developed RC marking functions first in the Norwegian dialects of Old Norse. From there, it spread to Icelandic, Swedish and then Danish (Noreen 1923, 319), while competing with the relative marker *er* (Hendery 2012, 89). This extension of *sem/sum* from Norwegian to other Scandinavian varieties is compatible with the hypothesis that the morphosyntactic differences between Icelandic *sem* and, say, Swedish *som*, may have a historical basis.

A diachronic correlation between *wh*-clauses and RCs has been proposed to explain why relative markers such as *som* introduce embedded *wh*-Qs. Givón (2009, 117-119) proposes that one of the possible ways in which RCs are grammaticalized is via “the *wh*-question pathway”, “where the use of an embedded question spreads from complements of cognition, perception and/or utterance verbs to relative clauses. For example, a language might have constructions such as ‘She didn’t know [who did it]’ or ‘He couldn’t think [where it was]’, and expand them by insertion of a head noun, resulting in ‘She didn’t know the person [who did it]’ and ‘He couldn’t think of the place [where it was]’” (cf. Hendery 2012, 36).

We hypothesize the opposite grammaticalization path. That is, clauses such as ‘I didn’t know [who did it]’ became grammaticalized by dropping the overt head noun and maintaining the *wh*-complement. Put differently, an embedded *wh*-Q would derive from a restrictive RC that has lost his head, i.e. a clause that is morphologically similar to a headless (or free) RC (FRC). This seems to properly account for the fact that a FRC is in general morphologically ambiguous between an embedded *wh*-Q and a RC without a lexical head noun (cf. Smits 1988). It is precisely this ambiguity that we find in the complements of (negated) semi-factive predicates like *to know* (see above).

If this hypothesis is on the right track, we need to show that, at some diachronic stage, a *wh*-element could co-occur with an overt head noun in a RC. This is exactly what we find in Old Swedish (1350-1400). More precisely, Delsing (2001) observes that around 1350 subject restrictive RCs in Swedish start being introduced by the *wh-som* string, represented by *hvilkin/hulkin* (‘which’) *som*. Before that time, and after 1600, the presence of an overt *wh*-element in restrictive RCs is not attested in this language.

(26) *Brudhgöma hulkin som är äronna konungir* [Old Swedish]

<table>
<thead>
<tr>
<th>groom</th>
<th><em>som</em> is honour king, GEN</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>hulkin</em></td>
<td>which</td>
</tr>
<tr>
<td><em>som</em> är äronna konungir</td>
<td>‘who is the king’s honour’</td>
</tr>
</tbody>
</table>

The example in (26) thus represents the ‘missing link’ in the grammaticalization path of A-bar dependencies. In case the *wh*-element (*hvilkin/hulkin*) is dropped, the result is a

The extension of the use of *er* from locative/temporal adverbial clauses to RCs seems to have followed a path of upward ‘migration’ in the Accessibility Hierarchy of Keenan and Comrie (1977). Originally, *er* was restricted to ‘locative RCs’ and place adverbials (i.e. headless locative RCs) and then it gradually spread to eventually refer even to subject and object NPs (Fleischer 2004, 234; cf. Hendery 2012, 97). Hendery (2012) suggests that the distribution of *er* might have primed that of *sem*. 
modern Scandinavian restrictive RC introduced by *som* only: this is arguably what happens in the passage from Old (1350-1550) to Modern Swedish. We further speculate that when the head noun is not present a FRC obtains. In order to substantiate this suggestion, we will end this section by making a few remarks concerning the formation of FRCs in Scandinavian.

We have already seen that the *wh-som* string introduces short (subject) embedded *wh-Qs* in Swedish and Norwegian. In these languages, the same string introduces a type of subject FRC that has been analyzed not as a real FRC, but rather as a ‘semi-FRC’ (or pseudo FRC). Smits (1988, 394) argues that in these FRCs the *wh*-pronoun is a propositional antecedent and *som* is a relativizer (cf. also Inada 2007, 62ff.).

(27) **Hvem *som* snakker med Marit, blir lykkelig.**

who *som* talks with Marit becomes happy

‘Whoever talks with Marit, becomes happy.’                     (Smits 1988, 394)

This type of FRC is only possible if the intended reading is non-specific, i.e. a reading in which the *wh*-element behaves like a quantifier (*whoever*, *whomever*, *whatever*, etc.). For FRCs with a specific reading, both Swedish and Norwegian employ demonstrative pronouns (e.g. *den* ‘that, the one’) or personal pronouns (e.g. *han* ‘he’).17

Under the hypothesis outlined above, the grammaticalization process (from RCs to *wh-Qs*) does not involve significant changes in the feature specification of the subordinating element (*som*). Rather, it involves just a function extension of the *wh*-subordinating element. This process has arguably taken place in modern Swedish and Norwegian. In a parallel fashion, the hypothesis that this functional flexibility may also characterize forms such as *som* itself is based on the assumption that some clause markers may become markers for a range of clause types, partly because “they are well suited to the role, in the sense that they already perform one or more of the characteristic operations” (Hendery 2012, 131) that are required by one of those clause types. According to our hypothesis, A-bar dependencies could thus be a case in point.

4.2. The distribution of *som* in Norwegian and Swedish

At this point, we need to clarify the syntactic distribution of *som* in (long-distance) A-bar dependencies in Norwegian and Swedish, in terms of its obligatoriness in some contexts and its optionality in others. We assume that the formation of both RCs and *wh-Qs* involves OP movement. For RCs we assume, following tradition, that the relative pronoun or OP undergoes A-bar movement inside the RC, in line with the (traditional) Head External Analysis of RCs (Quine 1960; Chomsky 1977; Smits 1988; Borsley 1997; Boef 2012, 2013 amongst others).

More specifically, we assume that A-bar movement of the OP in both *wh-Qs* and RCs creates an operator-variable dependency (predicate).18 Put differently, the OP is interpreted as a lambda operator at LF (cf. Adger and Ramchand’s 2005 [Λ] feature: a feature that is interpreted as predicate abstraction). This is illustrated in (28): the OP is interpreted at the

17 We tested (specific) FRCs with various Norwegian and Swedish speakers, but our sample is not broad enough to make a robust generalization about the distribution of *som* in (short and long) FRCs. We therefore leave this issue open for future research.

18 This part of the analysis could extend to all A-bar dependencies, thus arguably also equatives.
top of the dependency (see also section 4.3 below) and binds the variable (its trace or copy) at the bottom of the dependency.

(28) \[ \lambda x \text{[CP OP … [CP OP … OP …]} x \text{ (with e.g. } x \in \text{ human) } \]

Since the operator is found in the syntax of both \(wh\)-Qs and RCs (a \(wh\)-expression in a \(wh\)-Q or a relative pronoun or OP in a RC), it cannot be equated with a \(wh\)-question operator. We assume that \(wh\)-Qs contain in their left periphery a \(wh\)-question operator that takes the predicate created by movement of the OP (cf. (28)) as its argument and returns question semantics as its value (the details of question semantics need not concern us here). Put differently, it is the \(wh\)-Q operator that supplies the interrogative force of the clause, not the A-bar OP (much in the spirit of Cable 2010, 78). RCs on the other hand do not contain such a \(wh\)-question operator. Rather, in RCs, the predicate that is formed by movement of the OP (cf. (28)) is related to the RC head by means of Predicate Modification (Heim and Kratzer 1998, 95). Semantically, this amounts to set intersection: the RC denotes a set, which is intersected with the set denoted by the RC head.

In sum, RCs and \(wh\)-Qs both involve OP movement, thereby creating an operator-variable dependency. The difference between the two clause types is that only \(wh\)-Qs contain a \(wh\)-question operator; the semantics of RCs results from set intersection with the RC head.

The data presented in section 3 indicate that \textit{som} is ungrammatical in the most deeply embedded clause of a long-distance A-bar dependency, i.e. in an intermediate step of an A-bar derivation. This distribution suggests that \textit{som} must immediately follow an A-bar OP – either a \(wh\)-expression in a \(wh\)-Q or a relative pronoun or OP in a RC. This fits in perfectly with \textit{som} being a general marker of A-bar dependencies (cf. supra). As already briefly mentioned above, we accordingly propose that \textit{som} simply encodes an \([OP]\) feature. We furthermore assume the presence of an OP feature on each C-head in all A-bar dependencies.

Along the lines of Abels (2012), we assume that A-bar dependencies are derived via successive-cyclic movement that proceeds via all phase edges (no phase can be skipped; cf. Chomsky 2000), and that movement is triggered by a feature that is encoded on each intermediate landing site. Put differently, A-bar movement proceeds via the edges of vP and CP, which encode the feature that is responsible for the formation of the A-bar chain (we come back to this point in section 4.3). This is abstractly illustrated in (29) for long-distance A-bar movement of an object OP; following common practice, strikethrough of the OP indicates non-realization at PF.

(29) \[ [\text{CP OP … [vP OP [vP V [CP OP … [vP OP [vP V [vP … (OP) … ]]]]]]} \]

Specifically, a \textit{short} object RC is derived by first moving the VP-internal object OP to an A-bar position on the vP edge, after which it is further A-bar moved to the CP domain where it checks the \([OP]\) feature on C. Subjects, by contrast, can be directly extracted from their A-position in SpecvP, since this position is already on the edge of vP and therefore visible to the higher phase. We assume that in case of a subject A-bar dependency, the
subject OP does not move to SpecIP, because it would be frozen in place there, and unable to move further to SpecCP (see Rizzi and Shlonsky 2007).\(^{19}\)

The distribution of som is captured by the two descriptive generalizations provided in (30).

(30) Conditions on the distribution of som

(i) Som must be right-adjacent to an A-bar OP (the A-bar OP must locally c-command som, i.e. Spec-Head agreement).
(ii) Only in between an A-bar OP and the trace of this OP in A-position is the presence of som obligatory.

The first condition in (30) captures the fact that som is only attested in the highest clause of a (long-distance) A-bar dependency, as illustrated abstractly in (31) and (32). This condition is explained in light of the fact that som and the OP are both specified as [OP]. This relation is subject to a locality condition, i.e. it is a case of Spec-Head agreement.

(31) subject extraction
a. \([\text{CP OP} * \text{(som)}] \ldots [\text{vP} \text{tOP} \ldots ]\]
b. \([\text{CP OP} \text{(som)}] \ldots [\text{vP} \text{tOP} [\text{vP} \ldots [\text{CP tOP} (*\text{som})] \ldots [\text{vP} \text{tOP} \ldots ]]]\]

(32) object extraction\(^{20}\)
a. \([\text{CP OP} \text{(som)}] [\text{IP SUBJ} \ldots [\text{vP} \text{tOP} \ldots \text{tOP} \ldots ]]]\]
b. \([\text{CP OP} \text{(som)}] [\text{IP SUBJ} \ldots [\text{vP} \text{tOP} \ldots [\text{CP tOP} (*\text{som})] \ldots [\text{vP} \text{tOP} \ldots \text{tOP} \ldots ]]]]\]

Our claim that som can only be present if it is locally c-commanded by an A-bar OP receives further support from the absence of som in (subject) possessive RCs, as illustrated in (33).

(33) Her er mannen hvis hest (*som) vant løpet. [Norwegian]

> “Here is the man whose horse won the race.” (Taraldsen 1986, 179)

The A-bar OP is embedded inside the larger phrase hvis hest ‘whose horse’, and does not locally c-command som, as stated in (30i). As a result, insertion of som is not possible.\(^{21}\)

\(^{19}\) For ease of exposition we simply assume that the subject is extracted from SpecvP. Couched in a cartographic framework, Rizzi and Shlonsky (2007) argue that the subject skips the highest subject position in IP – i.e. the criterial position SpecSubjP – and that it is extracted from a lower subject position in IP. Our analysis is equally compatible with this assumption.

\(^{20}\) Recall that Norwegian differs from Swedish here in that only in Swedish som can optionally be present in object wh-Qs (see table 2). We will return to this issue in section 5.

\(^{21}\) This is somewhat of an oversimplification of matters, as a similar construction is fine in wh-Qs.
The second condition in (30) captures the fact that only in case the trace of the OP is in A-position (i.e. Spec\vP) and no lexical material is minimally intervening between the OP itself and the trace of the OP in A-position, is *som* obligatory. This is abstractly illustrated by the difference between (31a) and (31b): only in the former is *som* obligatorily present. The descriptive generalizations in (30) and their illustration in (31) and (32) indicate that the distribution of *som* is not subject to the same locality constraints that generally apply to agreeing complementizers. Complementizer agreement (CA) is in fact a local phenomenon (see a.o. Abels 2012), whereby a complementizer agrees with the subject of the subordinate clause that it introduces. CA for number is illustrated in (34). The example in (35) shows that CA is maintained when the subject is extracted.

(34) a. *.... dat ik zuinig leef*  
   that I economical live.SG  
   ‘... that I live economically’  
   [Katwijk Dutch]  

b. *.... datt-e we/jullie/hullie gewoon lev-e*  
   that.PL we/you.PL/they normal live.PL  
   ‘... that we/you/they live normally’  
   (Van Koppen 2005, 32)  

(35) *Doow denk ik de-s de wedstrijd zal-s winnen.*  
you think I that-2.SG the game will-2.SG win  
‘YOU, I think will win the game.’  
   (Van Koppen 2005, 102)  

This type of CA is different from the famous Irish CA. First, in Irish long-distance extractions, the complementizer of *each clause* that contains the trace of the extracted phrase shows agreement with that phrase, whereas in Dutch varieties only the complementizer of the clause that contains the most deeply embedded subject trace agrees with that phrase. Second, this type of CA is not restricted to subject extraction (see the example below). Irish CA is illustrated in (36)-(37) for long-distance RCs (data like these are often cited as a strong argument in favor of successive-cyclic A-bar movement).

(36) a. *Deir said* \( [\text{CP gur ghoíd na síogaí i } ] \)  
   say they \( C_{\text{-PAST}} \) stole the faires her  
   ‘They say that the faires stole her away.’  
   [Irish]  

b. *an ghirseach* \( [\text{CP a ghoíd na síogaí } ] \)  
   the girl \( C_{(\text{WH})} \) stole the faires  
   ‘the girl that the faires stole away’  
   (McCloskey 2001, 67)  

(37) *an rud* \( [\text{CP a shíl mót } [\text{CP a díúrt tú } [\text{CP a dhéanfá } ] ] ] ] \)  
   the thing \( C_{(\text{WH})} \) thought I \( C_{(\text{WH})} \) said you \( C_{(\text{WH})} \) do.COND.2SG  
   ‘the thing that I thought you said you would do’  
   (McCloskey 1990, 207)  

Perhaps this difference between RCs and *wh*-Qs can be attributed to the presence of the RC head in RCs, or to the possibility that in (33) the OP *hvis* pied-pipes only the noun *hest*, whereas in (i) *hvis* pied-pipes the modified noun *hest som vant lopet* (cf. Wayne 2007, 425). We leave this issue open for future research.

22 In A-bar dependencies in which an argument is extracted, minimal interveners would be arguments. The fact that adverbials can appear between the OP and its trace in subject position is predicted under a Relativized Minimality approach (Rizzi 1990).
Both types of CA – the dialectal Dutch kind in (34)-(35) and the Irish kind in (36)-(37) – are clearly different from the distribution of *som* in Norwegian and Swedish. In these Scandinavian languages the complementizer is not of the agreeing kind since its distribution is not subject to any locality constraint: merger of *som* in the C that is closest to the extraction site is ruled out (see (31b) and (32b)).

### 4.3. Proposal

We would like to suggest that the ‘non-locality’ that seems to characterize the distribution of *som* in Norwegian and Swedish is in fact dependent on the feature specification of the CP phase-head. We capitalize on Abels’ (2012, 85) condition on feature interpretation, given in (38) below, and we specifically argue that A-bar chains are formed by phase-heads that contain *interpretable* probing features and phase-heads that contain *uninterpretable* (or *formal*) probing features.

\[
\text{(38) Condition on feature interpretation}
\]

A strongly deficient feature F is semantically interpreted if and only if it is the trigger of terminal F-movement for some constituent.

In Abels’ terms, ‘strongly deficient features’ are those features that can be checked only via movement (not e.g. via long-distance agreement). According to condition (38), the [OP] feature that triggers A-bar movement of an OP in an A-bar dependency is only interpreted on the terminal head of the chain. Recall that we assume that this OP feature is present on each intermediate phase-head in an A-bar chain. Now, according to condition (38), only on the highest phase-head is [OP] semantically interpreted, whereas intermediate phase-heads encode a purely formal, uninterpretable counterpart of the same feature (see also Abels 2012, 147).

In the remainder of the paper, we refer to the interpretable/uninterpretable opposition in the following way. Interpretable features (also called ‘criterial’ features in Rizzi 2004ff), which are encoded on the highest phase-head in the A-bar chain, are represented in CAPITALS, e.g. [OP]. Uninterpretable features or *formal* features, which are encoded on the intermediate phase-heads in the A-bar chain, are represented in *italics*, e.g. [op]. The latter features are thus purely syntactic: no semantic interpretation is associated to them. We suggest that it is precisely this type of feature that cannot be lexicalized by *som*. Put differently, *som* cannot be merged in a C head that only bears formal features (viz. the embedded C in (31b) and (32b) above), whereas it is optionally merged in the C head where the features are actually interpreted (viz. the highest C in (31) and (32)). We thus argue that the distribution of *som* is sensitive to the interpretability of the features on the phase-head.

In the remainder of this section we wish to show how the presence or absence of *som* reflects the distinction between *formal* and *interpretable* features of the CP phase-head, and how the distribution of *som* relates to the properties of A-bar chains. For this purpose we need to address the following open issue: why do the interpretable C features obligatorily require *som* in some cases (short subject A-bar dependencies) but not in others (long-distance and non-subject A-bar dependencies)? We suggest that the obligatoriness of *som* results from a different A-bar configuration than the configuration in which *som* is only optionally present. Let us therefore consider in more detail the different chain types in
which *som* can occur; for ease of exposition, we repeat (31) and (32) as (39) and (40) respectively.

(39) subject extraction
   a. \[CP \text{OP} (*\text{som}) \ldots [\text{vP tOP \ldots}]]
   b. \[CP \text{OP} (\text{som}) \ldots [\text{vP tOP} [\text{vP \ldots} [\text{CP tOP (*\text{som}) \ldots [\text{vP tOP \ldots}]]]]]

(40) object extraction
   a. \[CP \text{OP} (\text{som}) [\text{IP SUBJ} \ldots [\text{vP tOP} [\text{vP \ldots tOP \ldots}]]]]
   b. \[CP \text{OP} (\text{som}) [\text{IP SUBJ} [\text{vP tOP} [\text{vP \ldots} [\text{CP tOP (*\text{som}) \ldots [\text{vP tOP} [\text{vP \ldots tOP \ldots}]]]]]]]

In short A-bar dependencies, *som* is obligatorily present only in subject extractions. This is the only case that reflects the configuration given in (30ii) above: *som* lexicalizes a head whose specifier is the OP, which locally c-commands its trace in A-position (SpecvP). All other A-bar dependencies considered so far (i.e. short object extractions and long-distance extractions) do not display this configuration: either the OP c-commands a trace in A-bar position (short object extractions, and the higher clause of long-distance extractions), or the trace in A-position is C-commanded by a trace of the OP (the lower clause of long-distance subject extractions), see (39) and (40) above.

From a crosslinguistic point of view, it seems to be the case that if an argument is A-bar moved from an A-position, the probe on the closest phase edge is subject to a spell-out requirement. For instance, we have seen that in some languages a special complementizer must be merged in the position of the probe (i.e. the c-commanding C head) in case a subject is extracted. This is the case of *qui* insertion in French and CA in Flemish Dutch and Bavarian (see section 4.2).

In the case of Norwegian and Swedish, however, the lower C head in long-distance extractions is not – in fact must not – be morphologically realized (*som* is ungrammatical in the left periphery of the lower clause of long-distance extractions). We suggest that this is so because the probing C head in these languages does not encode the interpretable feature [OP], but only its formal counterpart [op]. In fact, *som*, which is specified as [OP], can never lexicalize a head that encodes [op].

By contrast, if the head probing A-bar movement of an argument encodes interpretable features, i.e. [OP], insertion of *som* is either possible or obligatory. As for the obligatory case, we propose that a spell-out requirement demands that the C head that encodes [OP] is obligatorily spelled-out whenever it probes movement of an argument from an A-position that it directly c-commands (see above). Optional insertion of *som* is instead explained as follows. The spell-out requirement illustrated above does not apply in case a C head that encodes [OP] probes movement out of an A-bar position. In this case, insertion of *som* is not ungrammatical but optional. Optional *som* is indeed attested in short object A-bar dependencies and in the higher clause of long-distance A-bar dependencies, i.e. in case the C head encoding [OP] probes extraction out of an A-bar position.

To summarize, we have argued that (i) *som* is a complementizer that encodes a feature [OP] (it is a marker of A-bar dependencies), and (ii) insertion of *som* is sensitive to the interpretability of the features on C: it can only spell out the interpretable feature [OP], but not its formal counterpart [op]. Put differently, the insertion of *som* is sensitive to features.

\[In\ text\ this\ condition\ is\ too\ strong\ because,\ as\ it\ is,\ it\ predicts\ that\ the\ vP\ head\ probing\ object\ A-bar\ movement\ should\ be\ spelled-out,\ which\ is\ not\ the\ case.\ See\ the\ main\ text\ for\ a\ further\ discussion.\]
that are not deleted in the course of the derivation (interpretable features). It is precisely for this reason that *som can be merged in a C position in which interpretable [OP] is checked by an OP in its specifier. Only when features on C are deleted in the course of the derivation (because uninterpretable, i.e. on lower C heads), is *som ungrammatical.

If instead we had assumed that *som only encodes nominal features, similarly to what the Expletive Hypothesis argues (see section 2.3), we would not be able to explain why *som is optional in the higher clause of long-distance subject and object A-bar dependencies, as well as in short object A-bar dependencies. Moreover, our claim that *som is sensitive to the interpretability of CP phase-head features explains why *som is ungrammatical in the lower clause of long-distance A-bar dependencies.

A further issue deserves attention, namely the different distribution of *som in wh-Qs in Norwegian and Swedish. We address this issue in the next section.

5. Norwegian vs. Swedish

As mentioned in section 2.1, Norwegian differs from Swedish in that *som in Norwegian cannot appear in short object wh-Qs (or in the higher clause of long-distance wh-Qs, cf. table 2), whereas in Swedish it can. This difference was already noted by Taraldsen (1986). The example that he uses to illustrate the impossibility of *som following an object wh-phrase is given here in (41). The corresponding 'S-structure' is given in (42).

(41)  *Vi vet hvem *som Marit snakker med.
     ‘We know who SOM Mary talks with’

     (Norwegian)

     (42)  … [hvem, [s *som, [s Marit snakker med e, ]]]
     (Taraldsen 1986, 50)

Taraldsen (1986) argues that whereas hvem ‘who’ is an OP, *som is not an OP, but rather an expletive element; notice that who and *som cannot both be OPs as that would violate the ban on vacuous quantification, according to which each variable is bound by exactly one OP, and any OP that does not bind a variable is regarded as vacuous. The trace e, in (42) is bound by *som and because *som is not an OP, the trace is anaphoric. Being anaphoric, the trace thus needs to be bound in its governing category (Condition A of the Binding Theory), which in the case of (42) is S.24 However, the trace is free in S, as a result of which Condition A of the Binding Theory is violated. Therefore, sentence (41) is ungrammatical. Notice that the corresponding subject wh-Q in (43) is grammatical, because the trace is bound by *som in its governing category: S’.

(43)  *Vi vet hvem *som snakker med Marit.
     ‘We know who talks with Mary.’

     (44)  … [hvem, [s *som, [s e, snakker med Marit ]]]
     (Taraldsen 1986, 150)

24 See Taraldsen (1986, 159ff.) for details on assigning governing categories (see also Chomsky 1981).
To account for the grammaticality of sentences like (41) in Swedish, Taraldsen proposes to analyze *som* as an OP in those cases. Specifically, he mentions that the only way in which the S-structure in (42) is compatible with the Binding Theory is if *som* is analyzed as an OP. However, if so, why does the structure in (42) not violate the ban on vacuous quantification, as both OPs correspond to the single trace $e_i$? Specifically, the OP *som* restricts the reference of $e_i$, as a result of which $e_i$ cannot function as a variable to the OP *hvem*. The latter therefore becomes vacuous.\(^{25}\)

To answer that question, Taraldsen argues that in some languages, pronouns can in fact be used as variables. Crucially, in such cases, OP *som* does not necessarily restrict the referent of its variable ($e$ in (44) above), because this variable is a pronoun and pronouns do not need fixed reference. Therefore, the pronoun can still function as a variable to the OP *hvem*, and there is no longer a violation of the ban on vacuous quantification. This analysis ultimately predicts that languages that have resumptive pronouns allow constructions like (41), whereas languages that do not have resumptive pronouns, do not allow such constructions. Swedish does in fact have resumptive pronouns, whereas Norwegian does not.

Even though this analysis nicely reduces the difference between Swedish and Norwegian with respect to the grammaticality of (41) to an independent difference between the two languages, namely the absence or presence of resumptive pronouns, we will not pursue this line of reasoning. The main reason for that is that there does not seem to be a one-to-one correlation between the possibility of having resumptive pronouns and allowing *som* in the projection hosting the *wh*-OP in object *wh*-Qs. A search within the ScanDiaSyn database shows that in most Northern Norwegian and Trøndelag dialects, as well as in some Western Norwegian dialects, resumption (with subject topicalization) is accepted, whereas in Eastern Norwegian dialects resumption is generally ungrammatical. Nonetheless, *som*-insertion after a *wh*-pronoun in object *wh*-Qs is ungrammatical in all Norwegian varieties (see Vangsnes 2005, fn.5 for a couple of exceptions).

Without providing a full analysis of the difference between Norwegian and Swedish with respect to the grammaticality of having *som* in an object *wh*-Q (or in the higher clause of long-distance *wh*-Qs) and following Barbiers (2006, 2009), we sketch the outlines of an explanation for this difference in terms of the contrast between the notions (un)grammatical and (un)realized. Specifically, Barbiers (2006, 2009) suggests that part of (syntactic) variation (within a language) cannot be reduced to language-internal properties, and proposes a distinction between ungrammatical and unrealized syntactic structures. Ungrammatical structures are structures that violate general syntactic principles of the grammar, whereas unrealized structures are structures that can in principle be generated by the grammar (i.e. they are possible structures), but that happen to be unrealized in a certain language variety. The question of why in a certain language variety a structure is realized or unrealized should then not be answered in terms of language-internal properties, but rather in terms of sociolinguistic circumstances.

Applying this distinction to the issue under discussion, we could say that even though the presence of *som* in object *wh*-Qs (and in the higher clause of long-distance *wh*-Qs) is allowed by the grammar of both Norwegian and Swedish (i.e. *som* immediately follows an

\(^{25}\) As for the notion of (semantic) variable, Taraldsen (1986, 164) proposes the following definition: “a (semantic) variable with respect to the operator $O_i$ [is] a $\alpha$ $c$-commanded by $O_i$, whose reference is unrestricted in the domain of $O_i$.” Given this definition, the trace in (44) can act as a variable for the OP *hvem*, because its reference is not restricted by its binder expletive *som*.
A-bar OP, cf. (30)), this option is realized in Swedish but unrealized in Norwegian. We leave for future (sociolinguistic) research the question of why this option is realized in Swedish and not realized in Norwegian.

6. Summary and conclusion

The main goal of this paper was twofold. First, we showed on the basis of novel empirical data regarding the distribution of som in Scandinavian long-distance embedded A-bar dependencies (specifically restrictive relative clauses and wh-questions), that existing proposals of the distribution of som in short A-bar dependencies do not extend to account for the distribution of som in long A-bar dependencies. Second, we sketched the outlines of a new analysis of the distribution of som in Scandinavian A-bar dependencies.

Taking into account comparative as well as diachronic considerations, we argued that som is a complementizer – derived from the equative marker – that marks A-bar dependencies. It was furthermore suggested that the subject/object asymmetry regarding the distribution of som in short A-bar dependencies in Mainland Scandinavian as well as the distinction between optional som and obligatory som in short and long-distance A-bar dependencies in Mainland Scandinavian should be accounted for in terms of the (non-)lexicalization of different feature specifications of CP phase-heads. More specifically, we have argued that the insertion of som is sensitive to the distinction between interpretable and formal features in A-bar chains (Abels 2012). We furthermore proposed that even though the presence of som in short embedded object wh-Qs and in the higher clause of long-distance embedded wh-Qs is allowed by the grammars of both Swedish and Norwegian (i.e. it is grammatical), only Swedish chooses to realize this option, whereas in Norwegian these structures are unrealized (cf. Barbiers 2006, 2009). We have put forward the idea that the obligatoriness of som depends on the structural conditions of the A-bar chain. Specifically, som must merge in a position that is specified by an OP that is moved from an A-position. This condition descriptively accounts for the obligatoriness of som, thus for the subject/object asymmetry that is attested in short A-bar extractions, but not in long-distance extractions, in Mainland Scandinavian. The same condition rules out the possibility of randomly merging som in other, structurally different configurations (e.g. in object extractions). By suggesting that this condition holds, and that non-obligatory som is subject to language specific realization rules, we have offered a different account for the distribution of som, which avoids the theoretical problem of positing more lexical entries for the same morphological item (i.e. som as an expletive, as an OP, as a complementizer, etc.).

The contributions of this paper are thus mostly empirical in nature. It presents new data resulting from a systematic investigation of the distribution of som in Scandinavian, and shows that (obligatory) som is of a different nature than has previously been thought.

References


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Abstract: In this paper, I will show that an account based on the idea of Phrasal Spell-out can elegantly account for some puzzles regarding VN compounds in Romance languages, interpreted here as ‘lexicalized modifying clauses’. I advance the hypothesis of a rebooting mechanism in extended projections as an alternative to the postulation of silent items to account for the ambiguous nature of VN words that can appear either as noun or adjectives/adverbials. With such an approach no compounding rules are involved and we do not need to resort to categorial underspecification to account for the ‘VN facts’.

Keywords: Italian, idiom, Phrasal Spell-out, relative clause, VN compound.

1. Introduction

In this paper, I will provide a new account of the structure of (allegedly exocentric) Romance VN compounds 1 of the type lapiabotas (Spanish), lustrascarpe (Italian) (both: shoeshine) based on the mechanism of Phrasal Spell-Out. Phrasal Spell-Out states that Spell-Out applies to syntactic phrases and that more than mere terminals are stored in the lexicon (Starke 2009, 2011a). This leads to the consequence that there can’t be any pre-syntactic lexicon. Specifically, Phrasal Spell-Out admits lexical insertion to target non-terminal nodes, namely, phrasal nodes (see e.g. Neeleman and Szendrői 2007; Caha 2009; Pantcheva 2011; Franco 2012, 2013). In a word, with a Phrasal Spell-Out tool, lexical entries can spell out phrasal nodes. If morphemes and words are able to target phrasal nodes, this implies that lexical items potentially correspond to syntactic structures and not (exclusively) single heads (Fábregas 2009, 165-166) 2.

I will show that a mechanism of this sort can account in a principled way all the puzzling aspects of VN compounds unheeded by previous syntactic approaches 3, in which either a (variably declined) process of nominalization of V and its sister node (see e.g. Di...
Sciullo and Williams (1987), more layered derivations involving $v$ (Bok-Bennema and Kampers-Mahne 2005; Schroten 2010) and the Inflectional field (Ferrari-Bridgers 2005) or a structure involving a covert agentive suffix on $V$ (Bisetto 1999, 2004) are assumed. These problematic or peripheral (Magni 2010) issues include:

(a) Their (huge) productivity as modifiers;
(b) Their idiomatic reading (at least) when used as modifiers of $V$;
(c) The behaviour of a (broad) set of VN compounds, where the $N$ involved is not the internal argument of $V$.

We will show below that these puzzling issues can be elegantly solved by interpreting VN words as spelling-out full clauses in the nominal (and, marginally, in the verbal) domain.

2. VN puzzles

2.1 The inner modifying nature of VN compounds

Scalise (1992, 191) states that in Italian: “one type of highly productive compound is the $[V + N]$ compound which is always a noun”. Nevertheless, clear evidence for a modifying nature of a set of Italian VN items is reported in Ricca (2005), who showed that, while there are many instances of VN compounds alternating between a nominal and an adjectival reading (1a,c), there are also many purely adjectival VN words (1b,d) (i.e. they cannot host a nominal projection on their own)$^4$.

(1) a. aiuola spartitraffico; vano portabagagli; pistola sparacchiodi. (flower.bed traffic divider); (compartment car trunk); (nail gun)
   b. mozzafiato; strappalacrime; spaccatimpani. (breath-taking); (tear-jerking); (eardrum-breaking)
   c. $[\text{DP lo spartitraffico}]$ (the traffic divider)
   d. $[\text{DP } *\text{il/la mozzafiato}]$ (the breath-taking)

These formations represent a problem for those proposals that (in various ways) postulate zero derivations (since Marchand 1969), light nouns (see e.g. Bok-Bennema and Kampers-Mahne 2005; Ferrari-Bridgers 2005) or covert nominalizers in a parasynthetic construction of the type $[[V N] \emptyset N]$ (see e.g. Bisetto and Melloni 2008; Bisetto 2004;

$^4$ In a survey performed on the Repubblica Corpus, Ricca (2005, 475) found that, among neologisms, the most productive forms are adjectival VN words (74 tokens), followed by nominal items (38 tokens) and hybrid adjectival-nominal ones (4 tokens). Modifying VN compounds are common in all Romance languages. Consider the VN words below from French and Spanish, taken from Magni (2010, 6):

(i) a. casse-cou ‘reckless’ lit. break.neck
   b. tronchamozas ‘seducing’ lit. break.girls
VN Compounds in Italian and some other Romance languages

Scalise et al. 2005; see also Lieber 1992 and Ackema and Neeleman 2004 for analyses beyond Romance).

Indeed, it is difficult to assume that a covert suffix in a derivational process can be both a nominalizer and an adjectivizer at the same time and, additionally, it is costly to argue for a dual route model involving two different processes of word formation (see Rainer 1993, 274-275). Interestingly, as shown in Ricca (2005, 475), who based his analysis on a corpus of Italian journalistic writing, neologisms in VN formation are mostly pure adjectives of the type of (1b) above (see also Tóth 2010, 525; cf. fn. 4).

2.2 The idiomatic reading of VN as modifiers of V

There is a set of Italian VN compounds that can be used only as locuzioni avverbiali (adverbial phrases, see Ramaglia 2011), preceded by a preposition5. Again, these items cannot be used in independent nominal phrases:

(2) a. Gianni sa storia a menadito.
   Gianni know.prs.3sg history p inside.out lit. wallop.finger
   ‘Gianni knows history inside out’

b. Gianni corre a perdifiato.
   Gianni run.prs.3sg p like.hell lit. lose.breath
   ‘Gianni runs like hell’

c. Gianni ride a crepaless.
   Gianni laugh.prs.3sg p fit.to.burst lit. die.skin
   ‘Gianni laughs fit to burst’

d. Gianni canta a squarciagola.
   Gianni sing.prs.3sg p the.top.of.one’s.voice lit. slash.throat
   ‘Gianni sings at the top of his voice’

e. Gianni arrivò in un battibalenoN.
   Gianni arrive.pst.3sg p art twinkling.of.an.eye lit. beat.lightning
   ‘Gianni has arrived in the twinkling of an eye’

f. *il menadito; *il perdifiato; *la crepapelle; *la squarciagola; *il battibaleno.

The nominal nature of the items in (2) can be gathered from the fact that they are selected by a preposition (see Mateu 2002) and by the fact that the example in (2e) displays the indefinite determiner un before the VN item, but strangely they cannot host nominal phrases on their own. Thus, it is arguable for them a frozen idiomatic nature in adverbial expressions. To our knowledge, with the exception of Gross (1986) and De Gioia (2001), no formal account has taken them into consideration so far.

Actually, their status of ‘frozen nouns’ represents a problem for those accounts that

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5 As shown by Magni (2010, 7) the idiomatic use of VN items as adverbials is not restricted to Italian. Consider the examples below:
(i) (crier) à tue-tête ‘shout at the top of one’s voice’ lit. kill.head. French
(ii) (pagar) a tocateja ‘pay cash’ lit. touch.tile. Spanish
assume that the output category of compounds is underspecified (Ricca 2005, 484). In the adverbial VNs in (2), the categorical features are determined (inferred) by the syntactic environment, but at the same time, these VNs do not behave as nouns (e.g. they cannot be modified, they cannot enter a Determiner Phrase, they do not properly denote (see Kayne 2009, 7-8). Adverbial VNs are idiomatic constructions.

2.3. When N is not the sister node of V

Rainer and Varela (1992, 129) say that in Spanish VN words “the noun has to satisfy the internal argument position of the verb” and Scalise (1992, 191) states that in Italian VNs “only the direct internal arguments of the verb can appear”, while “the external argument of the verb does not appear to play any role in compounds”. Nevertheless, the syntactic architecture underlying VN words and the ‘thematic’ relation between the constituents are far more puzzling.

First, we can find VN words where the N is the subject of V as in the Italian examples in (3) (see Dardano 2009; Magni 2010):

(3) marciapiedi / batticuore
   (sidewalk) lit. walk.feet (anxiety) lit. hit.heart

Second, we can find VN items in which N is the prepositional object, as shown in (4):

(4) a. girasole (Italian) / tournesol (French)
   (sunflower) lit. turn.sun;
   b. mangiaufo (Italian)
   (scrounger) lit. eat.without.paying;
   c. saltimbocca (Italian)
   (rolled veal and ham) lit. jump.in.mouth
   d. cantambanco (Italian)
   (storyteller, also charlatan) lit. sing.in.desk
   e. pissenlit (French)
   (dandelion) lit. piss.in.bed;
   f. réveille-matin (French)
   (alarm clock) lit. awake.morning.

Third, we can find VN items in which the noun appears to be ‘the sister node’ of an unergative verbs (namely, formations that would lead to ungrammaticality in syntax) as in

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6 For arguments in favour of the psychological reality of underspecification see Barner and Bale (2002). Against this view, see the empirical evidence for categorial features on roots collected by Don (2004). See also Panagiotidis (2005) for arguments against category-less roots in syntax.

7 On the topic of oblique N in VN compounds, Magni (2010) has performed an extensive empirical survey among Romance languages. In particular, she found that VN items of the type ‘protect from N’ (e.g. Italian parafango ‘mudguard’, lit. protect.mud; Spanish guarda-brisa ‘windshield’, lit. protect.breeze; French protège-soleil ‘parasol’, lit. protect.sun) are very productive and imply an underlying architecture with a prepositional phrase assigning an ‘oblique object role’ for the N involved in the compound.
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(5), unaccusative verbs (pace Bok-Bennema and Kampers Mahne 2005, 15) as in (6), or is an object experiencer (see Belletti and Rizzi 1988; see also Arad 1998) as in (7). The examples below in (5-7) are from Italian (cf. also Rosenberg 2011 for a set of French examples).

(5)  
   a. tremacuore  
      (trepidation) lit. tremble.heart; tremare, to tremble - unergative;  
   b. corrimano  
      (handrail) lit. run.hand; correre, to run - unergative;

(6)  
   a. scendiletto  
      (bedside rug), lit. get.down.bed; scendere, to get down - unaccusative;  
   b. tornaconto  
      (profit) lit. come.back.count; tornare, to come back - unaccusative;  
   c. caschimpetto  
      (necklace) lit. fall.in.chest; cascare, to fall - unaccusative;

(7)  
   a. spaventapasseri  
      (scarecrow) lit. frighten.crows; spaventare, to frighten - psych-verb of the 'preoccupare' class (cf. A. Belletti and L. Rizzi 1988);  
   b. attirallocchi  
      (fake) lit. attract.tawny.owl, attirare, to attract - psych-verb.

Again, no previous formal (i.e. syntactic) account of VN formations in Romance languages has taken into account these prima facie peripheral cases.

2.4. VN words as modifying clauses: Phrasal Spell-out at work

Given the puzzling facts sketched above, I advance the proposal that VN items originate in modifying full clauses in the nominal (and marginally in the verbal) domain. Indeed, we have seen that we have a huge set of adjectival VN and also some adverbials 'idiomatic' VN. Actually, the idiomatic reading of adverbial VNs is the 'embryonic engine' for a Phrasal Spell-Out account. Indeed, as argued in Starke (2011, 6):

"Within the traditional approach, there is no easy way to handle multi-word idiomatic expressions, as witnessed by the clunkiness of the existing attempts at handling idioms while at the same time constraining spell-out to terminals. Under phrasal spell-out, idioms are natural: they are cases in which a relatively high-level constituent has been stored. The traditional example of “kick the bucket” can now be rendered as the lexicon storing an entire VP, or the modern-day equivalent of a VP (e.g. a syntactic layer above AspP)".

Notice that a non-compositional (idiomatic) reading of VN compounds is widely attested beyond the peripheral adverbal formations introduced in (2). See for instance the Italian nouns coprifuoco (curfew, lit. cover.fire) or beccamorto (undertaker, lit. peck.dead), among many other possible examples (cf. Dardano 2009). These facts show that it is possible to consider Romance VN words as multi-terminal expressions stored in the lexicon.

8 This item has the peculiarity of selecting a prepositional N object, matching the examples in (4).
such as they are, matching Starke’s (2009, 2011a) Phrasal Spell-Out account of verbal idioms of the ‘kick the bucket’ type (see also Fillmore et al. 1988).

Further, proceeding from the periphery to the core (Magni 2010) the most reasonable/inexpensive proposal to account for the great productivity of VN compounds as adjectives, is to consider that they are lexically stored constituents resuming full relative (or to some extent adverbal, given the examples in (2)) clauses. I will show below the reason why it is a welcome solution to lexicalize VN structures (phrases) by the mean of a Phrasal Spell-Out mechanism right in the highest node, namely in CP: a (relative) clause analysis of VN compounds can elegantly account for those formations in which N is not the direct object/patient of V.

As said before, VN items have been previously treated as lexicalizations of VP/vP/AspP (see Di Sciullo and Williams 1987; Bok Bennema and Kampers Mahne 2005; Schroten 2010, among others). Their CP nature has been obliterated by the fact that, being inherently modifying clauses, one of their arguments shares the same referent with the ‘matrix’ noun phrase and is therefore implicit.

This is the reason why we do not have knowledge of *NVN words. It is arguable that, in such a model, the primacy of N in the direct object position of VN formations is due to processing constraints. Indeed, many psycholinguistic works (see Friedmann et al. 2009, and references cited there) have found that children (and adults) find (at least a set of) object relative clauses as in (8) far much harder to understand (and produce) than subject relatives as in (9).

(8) il ragazzo che la formica ha schiacciato il ragazzo
‘the boy that the ant squashed’

(9) il ragazzo che ha il ragazzo schiacciato la formica
‘the boy that squashed the ant’

Hence, assuming that lexicalization processes match preferentially unmarked constructions we have a reasonable explanation for the greater than chance frequency of VN items in which N is the object of V (namely, they represent lexicalized subject relative clauses).

Nothing prevents, however, the realization of marked constructions, and this is the reason that we find ‘subject’ VN compounds (see the presence of many unergative and unaccusative V in VNs)\(^9\), such as the Spanish andaniño (‘baby-walker’, lit. go.baby) or the Italian battiscopa (‘skirting board’, lit. hit.broom) and the quite productive type of oblique

\(^9\) Notice that a ‘relative clause’ origin for VN words has also been advanced in classic descriptive works on the topic. See Tollemache (1945), Benveniste (1966), Coseriu (1978), Dardano (1978), among others. The interpretation of VN items as lexicalized modifying clauses has been also suggested in Ulland (1993) for French.

\(^10\) A question arises about the behaviour of subject N in VN items. Why do they not have the shape of NV compounds? Actually, subjects in post-verbal position in Romance languages are quite common. Standardly, they have been assumed to be in an in situ SpecVP position in their VSO order (see Ordóñez 1998; Alexiadou and Anagnostopoulou 2001; Cardinaletti 2004, among others), whereas verbs rise to T. Thus, it is possible to consider that V rises to T (or following Ferrari Bridgers 2005, 68-69 in a generic aspect position in a layered IP à la Cinque 1999) before lexicalization applies, while the subject remains in its SpecVP position.
VN Compounds in Italian and some other Romance languages

object VNs (e.g. French garde-boue, ‘mudguard’, lit protect.mud or Portuguese guarda-chuva ‘umbrella’ lit protect.rain).

For the purpose of this work, we can remain agnostic about the precise nature (e.g. restrictive vs. appositive) or the exact underlying syntactic configuration (e.g. matching vs. raising) of these lexicalized relative clauses. Nevertheless, I will assume here the unifying analysis of Cinque (2003, and following works), who considers relative clauses as prenominal modifiers in the extended projection of the noun. Cinque’s proposal is roughly sketched in (10) and, as I will show below, it can lead to interesting possible interpretations on the behaviour of VN items. A representation of the Phrasal Spell-Out mechanism of VN words in such a model is given in (11), where the VN compound spells out the lexical content below the CP node.

(10) \[Q_{univ} \ldots [\text{Dem} \ldots [\text{Numord} \ldots [\text{RelC} \ldots [\text{Numcard} \ldots [\text{Cl} \ldots [A \ldots [\text{NP}]]]]]]\]

(11)

\[\begin{array}{c}
\text{DP} \\
\text{CP} \triangleright \text{Phrasal Spell-Out \[VN \text{ COMPOUNDS}\]} \\
\text{IP} \\
\text{VP} \\
\text{NP}
\end{array}\]

Actually, the idea of a lexicalization of VN clauses implies that all functional material is erased and two issues arise at this point.

First, what is the nature of the verbal element in VN compounds? For instance in Italian, it has been considered an imperative form (Rohlfs 1968; Floricic 2008; Progovac and Locke 2009), an indicative third person singular (Di Sciullo 1992), a deverbal nominal form (Zuffi 1981; Bisetto 2004); a root plus a thematic vowel (Scalise 1992; cf. also Ralli 2008, who argues that the thematic vowel acts as a linker). All these hypotheses have weak points (see Ferrari Bridges 2005; Floricic 2008). We propose here, following Vogel and Napoli (1995; see also Pagliaro 1930), that the verbal constituent of VNs is an uninflected stem form (or the smallest processable unit, M. Rita Manzini, p.c.), due to the ‘erosion’ of functional material triggered by the application of Phrasal Spell-Out.

Interestingly, on typological grounds, the lexicalization of full relative clauses is a widespread phenomenon. Just to give an example, in Divenhi, a Indo-Aryan language of the Maldives, lexicalized adjectival relative clauses are quite common. Examples are nasību dera ‘unlucky’ (from ‘luck is bad’) or biru kudā ‘brave’ (from ‘fear is small’). Also, some verbal relative clauses are lexicalized as adjectives: agu huri ‘valuable’ (from ‘there is value’), nan huri ‘famous’ (from ‘there is the name’) (Cain and Gair 2000, 30).

Cinque’s proposal is particularly appealing because, relying on Kayne’s (1994) theory of Antisymmetry, hypothesizes that the different types of relative clause found in natural languages (e.g. post-nominal, prenominal, internally headed, correlative, headless, etc.) can be derived from one and the same syntactic configuration. Concerning their locus of merge within the functional skeleton of the nominal projection, Cinque - basing on a huge set of typological data - argues that relative clauses are sandwiched between the numeral and the demonstrative, even if a lower slot (between the numeral and adjectives) is also a possible option, especially for reduced relative clauses (see the representation given in (10)).

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Second, why is gender variably assigned to VN items (e.g., Italian *il giradischi*, the-masculine record-player, *la lavastoviglie*, the-feminine dishwasher) and not set to a default value, if we do have to erase functional materials to phrasally store them? Actually, Barrie (2011, 169) notes that VN words “are nearly universally masculine across all Romance languages”. This is very close to a default value (cf. also von Heusinger and Schwarze 2013). Notice that our proposal is not in contrast with Gracanin-Yuksek (2005)’s idea of a higher ‘nominalizing’ node in which gender is computed. Concerning this, consider that a possibility is that that gender inflection is not, in fact, a syntactic object but a *dissociated morpheme* along the lines of Embick (1997), and Embick and Noyer (2001).

Approximately, the same pattern holds for number features: VN’s nominal side is either plural or mass (cf. Dardano 1978; Barrie 2011). As for gender, we have counterexamples (e.g., French *tire-bouchon*, ‘corkscrewing’), but the pattern plural/mass is respected in most cases and again we are close to a default (possibly post-syntactic) value. In our view the *suction* of functional material is possibly an economy driven process (in the sense of e.g., van Gelderen 2004) to allow full clauses to be stored in the lexicon.

Notice that, interestingly, also many idioms of the *kick the bucket* type in Italian erase functional material in the VP as shown in (12)13.

(12) a. I ragazzi hanno fatto il fuoco > compositional reading
   ‘The boys lit the fire’ lit. ‘made the fire’
 b. I ragazzi hanno fatto il fuoco > idiomatic reading
   ‘The boys shot’ lit. ‘made fire’
 c. Gianni vuole attaccare il bottone > compositional reading
   ‘Gianni wants to sew the button’
 d. Gianni vuole attaccare il bottone > idiomatic reading
   ‘Gianni wants to pick up’

Furthermore, our *clausal* proposal can be elegantly extended to other (allegedly exocentric) Romance compounds of the PN (e.g., Italian *fuoristrada*, all-terrein vehicle, lit. *out.road*), NA (e.g., Italian *pellerossa*, American Indian, lit. *red.skin*) or AN (e.g., Italian *purosangue* thoroughbred, lit. *pure.blood*) type14. Here the verbs of the Phrasal Spell-out clauses turned into compounds are erased being functional items: *be*, *have* or also *causatives*15. Notice, indeed, that causatives are ‘slight productive’ in VN constructions (cf.

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13 The idea of functional ‘erosion’ presented here is connected to the idea that syntactic functional nodes can be phonologically *silent*, but still be there (see e.g. Kayne 2003). This is a tenant of the cartographic paradigm (Cinque and Rizzi 2010), who argues for the universal character of functional/grammatical hierarchical structure, despite the fact that no language seems to work out the whole structure with ‘pronounced’ items. Nevertheless, I believe that syntactic *silence* is sensitive to the functional/lexical divide (i.e. items with a *lexical content* cannot be silent). Thus, in section 4, I will advance an alternative to *silence* based on the *rebooting* of extended projections.

14 Note that Franco et al. (2013) provide empirical (neurolinguistic) evidence for a common nature of VN, PN, NA, etc. ‘exocentric’ compounds.

15 Consider for instance the Italian NA compound *pellerossa*. The mechanism of Phrasal Spell-out, in this case, would be as follows.

(i) \[
X, \text{che ha la pelle rossa}] > \text{(Phrasal) spell-out in the CP node = 'pelle rossa'}
\]
Fadin 2009, 426-27). See for instance the French *pisse-chien*, ‘plant which makes the dog pee’, lit. ‘pee.dog’. Clauses involving causative structures may be the underlying source of some subject VN compounds (cf. for instance examples (3) and (5a,b) above).

Finally, our idea is somewhat coherent with what is stated in Gaeta and Ricca (2009, 41), who precisely observe that:

“many VN-formations occurring in newspaper corpora in modifier function could hardly be labeled as restrictive or qualifying adjectives; rather, they express a looser kind of modification, with transient/eventive character, bordering on the function of a (reduced) relative clause.”

4. Extended projections and Rebooting

We have seen that our idea appealingly explain the great productivity of modifying VN items, but what about VN nouns in a model such as the one in (11)? An immediate explanation can be that such VNs modify a silent (light) noun along the lines of e.g. Cinque (2011), but there are empirical facts that go against this idea on cross-linguistic grounds as shown by Dryer (2004)\(^\text{16}\). A tentative alternative explanation is that VN nominalization is associated to the *reboot* of an extended projection\(^\text{17}\). This idea can be sketched as a principle as follows:

(13) **Extended Projection Reboot Principle:** If a modifier, hosted in Spec of a X° in an extended projection (exP; e.g. NP, VP etc.), happens to be Phrasally Spelled-Out as XP, the aforementioned exP can freeze (be pruned), so that XP can inherit exP (e.g. NP/VP etc.) categorical status. If the (phrasal) modifier inherits categorical status in XP, the exP reset/reboot up from there.

This idea might seem utterly speculative at first sight, but actually has many advantages:

a) It does not need to resort to empty (postulated) lexical elements in syntax;

b) Specifically concerning VN items, we do not need to resort to arbitrary (ad hoc) XP to X° conversion/recycling (see Bok Bennema and Kamper Mahne 2005, 24-25; see

The embedded verb here is *ha* (have.prs.3sg.), which being a functional item is subject to erosion together with the complementizer *che* (that) and the determiner *la* (the.f).

\(^{16}\) Dryer (2004, 49) argues that it is not clear that all natural languages “*have a general noun for ‘thing’ that can be used not only for concrete things but for any abstract thing as well*”. He cites Kutenai, an isolate language spoken in western Canada as an example. Further, he provides interesting data from Cebuano (an Austronesian language of the Philippines), where a silent noun account of ‘noun phrases missing nouns’ is ruled out by the fact that Cebuano allows noun phrases consisting of just an article plus a clause, and thus there is very little motivation for positing a silent head noun (see the discussion in Dryer 2004, 49-51).

\(^{17}\) With the term ‘extended projection’ (originally coined in Grimshaw 1991), I mean the ordered set of functional heads dominating a lexical category (e.g. Tense, Aspect, etc. for the category ‘Verb’ or Determiner, Numeral, etc. for the category ‘noun’, cf. the Cinquen structure in (10)).
also Di Sciullo and Williams 1987), because here we move straight ‘phrasally’;

c) We do not need to resort to categorial underspecification or double routes to word formation to account for the ambiguous nature of VN words (manifesting themselves either as nouns or modifiers).

Notice that, for what concerns the latter point, a possibility could be also to parameterize the height of Phrasal Spell-Out (along the lines of Starke 2011a). In our case, considering the model sketched above in (11) and applying rebooting as introduced in (13), VN modifiers would be spelled-out in IP, while VN nouns would be spelled-out in CP.

Empirical facts support the rebooting idea. Indeed, many genetically diverse languages allow noun phrases with relative clauses and without nouns (e.g. headless relatives) (cf. Dryer 2011). For example, (14a) from Miya, a Chadic language spoken in Nigeria, is a noun phrase consisting of just a relative clause, with exactly the same form as the relative clause modifying a noun in (14b) (Dryer 2004, 46).

\[
\begin{align*}
(14) & \quad \text{a. } \text{má} & \text{rádáza} \\
& \quad \text{REL.FEM.SG} & \text{wet} \\
& \quad \text{‘the one [feminine, singular] that is wet’} & \quad (\text{Schuh 1998, 266}) \\
\text{b. } \text{kába} & \text{rádáza} \\
& \text{gown} & \text{REL.FEM.SG wet} \\
& \text{‘the gown that is wet’} & \quad (\text{Schuh 1998, 263})
\end{align*}
\]

Moreover, some Romance languages allow noun phrases consisting of a determiner plus a relative clause. Consider the Spanish example in (15) (Dryer 2004, 47).

\[
\begin{align*}
(15) & \quad \text{el} & \text{[que pasa]} \\
& \quad \text{the.M} & \text{[REL pass]} \\
& \quad \text{‘the one who is passing’}
\end{align*}
\]

Additionally, rebooting seems to be marginally available also in the verbal domain, as shown by the examples in (16), where the Italian adverbial VN squarciagola has originated the verb squarciagolare (to scream, who can shift back into the nominal domain as in (16b)).

\[
\begin{align*}
(16) & \quad \text{a. } \text{Non avete sentito come ho squarciagolato Strada Facendo.} \\
& \quad \text{‘You have not heard as I screamed Strada Facendo’} \\
& \quad \text{[title of a pop song], retrieved from Google.} \\
\text{b. } \text{Non ci importa nulla dello squarciagolare di Al Bano…} \\
& \quad \text{‘We do not care anything about the screaming of Al Bano’} \\
& \quad \text{La Repubblica 08/12/2004, retrieved from Enciclopedia Treccani On-line.}
\end{align*}
\]

Actually, rebooting can be also seen as a representationalist way (cf. Brody 2003; Manzini and Savoia 2007) of addressing the generalization argued for in Cinque (2012), namely the fact that nominal modifiers can be silent (i.e. present but unpronounced) only if
the NP and the extended projection of the NP below them are also silent\(^{18}\). Cinque (2012) basically argues that this empirical generalization follows in a derivational way from a condition on DP-internal movement (as suggested in Cinque 2005), to the effect that only constituents containing the (unmoved) NP are allowed to move. On the contrary, our idea resort to (the height) of Phrasal Spell-Out and does not involve movement (one of the problems of Cinque, 2005 is precisely to find clear motivations for DP-internal movement; cf. Steddy and Samek Lodovici 2011).

Our proposal is also reminiscent of Adger (2011)’s idea that extended projections are formed by self-merge, rather than ‘canonical’ external merge. David Adger precisely means that rather than functional materials being introduced as heads, an extended projection merges with itself, creating a new projection, the label of which is provided by a labeling algorithm (see also Svenonius 2012).

5. Idiomaticity and Compositionality

We have seen that Phrasal Spell-out means that in the lexicon exponents are associated to trees. Applied to VN compounds, this idea is prima facie reminiscent of a lexicalist approach à la Halle (1973), where it is also allowed that the lexicon stores phrases or even whole sentences. Note that, ‘in the lexicon’, many other approaches allow non-morphological objects to be stored (see e.g. Di Sciullo and Williams 1987, and their notion of listeme). What is distinctive in the case of Phrasal Spell-out is that a single, morphophonologically undecomposable exponent, can correspond to a phrasal structure. This means that in a VN word like Italian *lavapiatti_, ‘dishwasher’ Phrasal Spell-out allows each one of the exponents (*lav-a-piaatti*) to correspond to a phrasal structure. If *lav-a-piaatti* is stored in the lexicon, it is not as a morpho-phonological unit, but as an idiom.

At this point, due to our idiomatic interpretation of VN compounds, we would expect a much less transparent relation between the constituents and the whole word.

Indeed, many VN words (cf. Italian *coprifuoco* or *beccamorto* and the adverbial VNs already discussed in section 1) are idiomatic in nature, as shown by the Italian examples in (17) (cf. also e.g. for Spanish, Jiménez Ríos 1999, 125-127):

(17) cascamorto,           rubacuori,  
     (lounge lizard, lit. fall.dead)    (seducer, lit. steal.heart)  
rompiscatole,          cacadubbi,  
     (nuisance lit. break.boxes)   (ditherer, lit. shit.doubts)  
grattacielo,           strozzapreti…  
     
\(^{18}\) Notice also that our idea differs from standard nanosyntactic assumptions. Phrasal Spell-Out in nanosyntax is a relation between exponents and structures, which means that lexicalisation happens once the derivation has been completed. As said, the rebooting mechanism is representationalist in nature (i.e. the mechanism has no memory of and is not affected by silent/empty categories lying below in a derivationalist model à la Cinque). A possible way to reconcile standard nanosyntax with the present proposal is possibly given in Starke (2011b) (retrieved via Caha and Pancheva 2012), where lexicalisation happens at each node without waiting for phases to be completed, and lexical entries can refer to other entries in the lexicon by means of pointers. But these technical details are clearly not crucial for the present discussion. Further notice that our proposal differs from ‘orthodox’ nanosyntax in another respect: rebooting is sensitive to the Specifier being lexicalised as a phrase and Starke (2004) actually proposes a syntactic model in which specifiers do not exist.
But many other Romance VN words (the majority of them) are compositional in nature: a *lavapiatti* is ‘someone that washes dishes’. The relevant question - at this point - is: if VN are structured as idioms (i.e. undecomposable units in the encyclopaedia) how do we get a compositional semantics?

The answer possibly lies in diachronic facts. According to Lloyd (1966, 1968), Romance VN words emerged from (idiomatic) nicknames, commonly lively and hilarious, and then expanded to other frames around 12th/13th century, when VN started to appear as animals, plants, occupations, places, instruments, etc. (cf. also Rosenberg 2007; Progovac 2012).

As explicitly stated by Floricic (2008, 186), in anthroponymic VN compounds (from which according to Lloyd all other forms have originated) 19:

“That the referent [...] is independent from that of the constituent parts of the compound: nouns like Bevilacqua or Mangiapane do not refer to some kind of water or bread, nor do they refer to the activity of drinking and eating [...]. The name has conventionalized as pure designation of a given entity [...]. The nature of the entity in question, thus, cannot be predicted on the basis of the information conveyed by the elements of the compound: to quote Coseriu (1981, 5), the fact that V-N compounds pick up such or such object or such or such individual is not a matter of langue but a matter of antonomastic designation.”

The properties stated in Floricic (2008) for anthroponymic VN words are clearly of idiomatic nature.

Hence, given the fact that the first VN were commonly idioms, we can explain the extension to a compositional meaning by the mean of a process of exaptation in the sense of Lass (1990, 1997, 316-324), where “exaptation [...] is the opportunistic co-optation of a feature whose origin is unrelated or only marginally related to its later use. In other words (loosely) a ‘conceptual novelty’ or ‘invention’” (Lass 1990, 80). In our case, structures such as *exocentric* VN compound, that have been considered by Progovac and Locke (2009) and Progovac (2012), as ‘syntactic fossils’, originally used to designate idiomatic nicknames (in a not very productive fashion), have been recycled in the lexicon to (very productively) convey semantically transparent (i.e. compositional) structures (cf. also Jackendoff 1999, 2002 on the notion of proto-syntactic fossil). With the same structure and the same mechanism of Phrasal Spell-Out, exaptated (i.e. co-opted) compositional VN forms have strongly ‘colonized’ the lexicon.

19 Interestingly, many Italian anthroponymic VN retain a determiner in their structure (e.g. *Bevilacqua, Taglialatela, Beccalossi*). This fact, according to the present proposal, can be a sign of the fact that in earlier stages of VN’s development (we have seen that, diachronically, nicknames were the first instance of VN compounds in Romance) the functional material of this kind of ‘lexicalized clauses’ was not consistently erased. Further notice that VN compounds "are found across languages, not only Indo-European (IE), but also non-IE, exhibiting striking parallelisms in form and imagery.” (Progovac 2012, 50). A nickname-like origin of VN words in English has been explicitly argued for in Weekley (1917). VN compounds are present in Germanic Languages (cf. Ackema and Neeleman 2004), Slavic (cf. Progovac, 2012), but also in genetically unrelated languages such as Chinese or Tashelhit Berber (Progovac 2012, 56). Nevertheless, in such languages VN items are not as hugely productive as in Romance languages.
Thus, the great productivity of compositional VNs does not weaken our proposal, thanks to the diachronic facts introduced above.

Moreover, the ample use of neologisms and *hapax legomena* of the VN types, such as the ones described by Ricca (2005) for newspaper corpora, which clearly resemble the structure of (reduced) relative clauses (e.g. *astensione salva-Prodi* ‘Prodi-saving abstention’; *quel terzo posto acchiappa-Uefa* ‘that Uefa-catching third place’; *colpo di testa fissa-risultato* ‘result-securing header’), can be considered as evidence for a closer modifying nature of this kind of compounds.

Indeed, from a psycholinguistic viewpoint, as argued by Plag (2006, 542), *hapax legomena*:

> “are crucial for the determination of the productivity of a morphological process because in very large corpora hapaxes tend to be words that are unlikely to be familiar to the hearer or reader. Complex unknown words can be understood at least in those cases where an available word-formation rule allows the decomposition of the newly encountered word into its constituent morphemes and thus the computation of the meaning on the basis of the meaning of the parts. The word-formation rule in the mental lexicon guarantees that even complex words with extremely low frequency can be understood. Thus, with regard to productive processes, we expect large numbers of low frequency words and small numbers of high frequency words, with the former keeping the rule alive. In contrast, unproductive morphological categories will be characterized by a preponderance of words with rather high frequencies and by a small number of words with low frequencies.”

6. Conclusions

In this paper, I have shown that an account based on the idea of Phrasal Spell-Out can elegantly account for some puzzles regarding VN compounds in Romance languages, interpreted here as lexicalized modifying clauses. I have also advanced the hypothesis of a *rebooting* mechanism in extended projections as an alternative to the postulation of silent lexical items to account for the ambiguous nature of VN words that can appear either as nouns or adjectives/adverbials. With such an approach no *compounding rules* are involved and we do not need to resort to *categorial under specification* to account for the ‘VN facts’.

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A SYNTACTIC ANALYSIS FOR FRENCH LIAISON

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Abstract: French liaison consists in the pronunciation of a normally mute consonant in final-word position, which arises when the following word begins with a vowel. It is a sandhi phenomenon which produces resyllabification between Word1 and Word2. Liaison seems to be sensitive to the syntactic environment, since purely phonological conditions are not sufficient to trigger it in certain contexts. Following the assumptions of the phonology-syntax interface (Chomsky-Halle 1968; Selkirk 1984), I aim to investigate the syntactic contexts of application for obligatory, optional and impossible liaisons. The liaison data are analysed in the light of cartographic studies (Cardinaletti 2004; Cinque 2010), and three general rules are proposed to account for its application: liaison is obligatorily triggered when two words are in a head-head or in a Spec-head configuration within the same maximal projection; liaison can optionally occur between a head (or the copy of a head) and its complement within the same maximal projection; liaison is ruled out between two words which do not belong to the same maximal projection, when more than one morphosyntactic boundary intervene between them. Finally, stylistic factors play a role in determining optional liaisons, whereas obligatory and impossible liaisons are exclusively determined by syntactic conditions.

Keywords: French liaison, phonology-syntax interface, direct/indirect modification adjectives, subject clitics

1. Introduction

French liaison is a multifaceted object of study: although it appears as phonological phenomenon in the first place, it is also related to morphology and syntax, and thus requires a broad-spectrum investigation. Moreover, its application also depends on stylistic and sociolinguistic factors. In the last decades, liaison has been widely analysed from both a phonological (Durand 1990; Lyche & Durand 1994, 2008; Nespor & Vogel 2007 among others) and a sociolinguistic point of view (Ashby 1981; Bergen 2005; Booij & De Jong 1987; Howard 2004, 2006). In this article, I will not treat the purely phonological aspects related to liaison, and I will only partly consider the role that stylistic aspects play on its realisation. The purpose of this study is to examine the phonology-syntax interface.

Broadly speaking, liaison can be defined as a sandhi phenomenon that produces resyllabification. In a sequence Word1-Word2, the coda of Word1 – which is normally mute – is realised as the onset of the first syllable of Word2, when the latter begins with a vowel. This process is exemplified in (1), adopting the syllabic structure proposed in Durand (1990, 205):
Liaison has already been analysed as a phonological phenomenon sensitive to the syntactic environment. The relevance of the syntactic context is proved by the fact that liaison does not always apply when purely phonological conditions are met: in the examples given in (2), liaison mandatorily occurs between the numeral and the following noun in (2a), whereas it is completely ruled out between the numeral and the following preposition in (2b), even though the phonological environment is the same in the two cases:

(2) a. il a eu deux enfants [dɔzafã]  
   he has had two children  
   ‘He has had two children’

   b. il a eu deux en maths [dɔ amat]  
   he has had two in maths  
   ‘He got two in maths’

Selkirk (1972, 1984) suggests that liaison occurs within a phonological word and not between phonological words. The crucial idea of her analysis, which I endorse, is that phonological words are defined on syntactic grounds, in line with Chomsky & Halle (1968, 366) (cf. Nespor & Vogel 2007). Thus, since the 1970s, it has been observed that French liaison operates between two closely related words, when just one word boundary separates one word from the next (Selkirk 1972; Dell 1980; Durand 1990). Starting from these analyses, I will use more recent syntactic theories to account for the contexts of application of French liaison within an X-bar template, and my purpose is to investigate the syntactic rules which govern liaison. I will particularly rely on the cartographic analyses put forward in the last two decades. On the one hand, cartographic theories allow us to provide a formal definition of the morphosyntactic boundaries which force, permit or exclude liaison; on the other hand, the liaison information is suggestive about the properties of the underlying syntactic structure, and can contribute to the syntactic investigation. The syntax-phonology interface in liaison gives support to X-bar syntactic theories (cf. Morin & Kaye 1982).

Although I will mainly deal with cartographic studies, I also consider some proposals developed within the Minimalist Program (MP). I examine how the Phase Impenetrability
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Condition (PIC, Chomsky, 2000, 2001, 2005) can be applied to some contexts of realisation of French liaison1.

The data provided in the present study are partly elicited from French native speakers, partly taken from the data-base of spoken French PFC (Phonologie du Français Contemporain) (Durand et al. 2009), and partly based on previous studies of liaison (Selkirk 1972; Morin & Kaye 1982; Nespor & Vogel 1986). The data from native speakers have been elicited through an oral test. The informants were asked to read texts which focused on the specific liaison contexts under investigation. The contexts of application of liaison taken into account were the following: in the DP, I tested the liaison triggered by determiners, quantifiers and adjectives with the following word; in the IP2, I tested liaison between pronominal/lexical subjects and the finite verb; in the vP-VP, I tested how liaison applies between a transitive verb and its internal argument. The contexts of application of liaison have been tested by means of two different series of texts: the first one reproduced an informal style of speech (dialogs between colleagues or friends), while the second one reproduced an elevated style of speech (newscast, formal discourse). I recorded the performances of 12 informants from five different regions of France (Île de France, Lorraine, Alsace, Savoie, Midi-Pyrénées). The group of informants consisted of five men (who ranged in age from 25 to 55 years) and seven women (25 to 40 years).

The article is structured as follows: in section 2, I briefly discuss the stylistic approach proposed by Selkirk (1972), taking into consideration the relation between liaison and the style of speech adopted by the speaker. In section 3, I provide a general overview of the liaison contexts. In section 4, I deal with liaison contexts in the DP: I firstly observe whether liaison is sensitive to the functional vs. lexical nature of the Word 1; I then consider whether liaison data support the internal articulation of the DP proposed in Cinque (1994, 2010). In section 5, the analyses proposed for the DP are extended to the liaison contexts in the IP: specifically, I examine the internal articulation of the subject projection, considering whether the liaison data are compatible with the structure proposed in Cardinaletti (2004). Finally, in the last section, I present data about the liaison contexts in the vP-VP domain: I observe whether the PIC (Chomsky 2000), which has already been used to account for a sandhi phenomenon in Easter Abruzzese (Biberauer & D’Alessandro 2008), can be extended to the analysis of French liaison.

2. The stylistic approach

Selkirk (1972) distinguishes three styles of speech for French and suggests that each style has its own grammar. The first style, defined as Conversation familière, corresponds to an informal register. In this style, liaison mainly involves non-lexical items (determiners and clitics in particular). The second style relates to formal conversation and is classified as Conversation soignée. It is characterised by a larger number of liaison contexts, including those in which lexical items located in the specifier (Spec) of a head retain their final

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1 I would like to thank in particular Adam Ledgeway and Theresa Biberauer for discussing my data with me and for suggesting me to take the PIC into account.

2 In the present study, I will adopt the more traditional label IP (Inflection Phrase), instead of TP (Tense Phrase). I will use it as a general label including the split between Tense Phrase and Agreement Phrase. The liaison between a subject clitic and a finite verb is particularly evocative of the presence of person features encoded under the node IP.
consonant (Selkirk mainly refers to liaison between adverbs and adjectives, and to liaison between auxiliaries and past participles). Finally, the third style concerns reading and discourse, and is indeed referred to as Lecture ou discours in Selkirk’s classification. This style displays the largest range of liaison contexts, since inflected nouns, verbs and adjectives trigger liaison with their complements. Selkirk also distinguishes a set of readjustment rules which operate to result in a single word boundary where liaison applies, and a double word boundary where liaison is not realised.

In the present study, I adopt traditional labels, such as obligatory, optional and impossible liaison. Despite the fact that the style of speech does influence the realisation of French liaison, as shown in Selkirk, in this study I will not concentrate on stylistic (or sociolinguistic) aspects. Instead, obligatory, optional and impossible liaison contexts will be investigated considering exclusively the syntactic conditions which determine them, irrespective of the style of speech.

As for obligatory contexts, in line with Selkirk’s observations, I reflect on how functional categories trigger obligatory liaison with the following word in all styles of speech; moreover, I also account for the (restricted) contexts in which obligatory liaison involves two lexical items. I then deal with impossible liaisons, and observe which contexts of application are necessarily ruled out on syntactic grounds, regardless of the style of speech. I finally consider optional liaisons: I do not treat optionality as a phenomenon which exclusively depends on stylistic factors, but I examine the syntactic conditions which make the realisation of liaison possible, without requiring a compulsory application.

3. Overview on obligatory, optional and impossible liaison contexts

Before analysing the application of liaison in more details, I provide a general overview of the liaison contexts which will be examined in the following sections. As for obligatory liaison, I will analyse those between a determiner (or a quantifier) and the following noun (or adjective) in the DP (3a), and those between a subject clitic and a finite verb in the IP (3b); I will also show that prenominal adjectives trigger obligatory liaison in the DP, as determiners do (3c):

(3) a. les oncles
    the uncles
b. ils offrent
    they offer
c. de bons amis
    of good.PL friends
    ‘Good friends’

For optional liaison contexts, I will take just two cases into consideration: liaison between a noun and a postnominal direct-modification adjective in the DP (4a), and liaison between a transitive verb and its internal argument in the vP-VP (4b):
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(4) a. un marchand [[de draps anglais]]
   a merchant of sheets English.PL
   ‘A merchant of English sheets’
   (Selkirk 1972, 235)
b. [il portait [un manteau]]
   he wore a coat

Finally, I will account for impossible liaison, which affect in particular lexical subjects in the IP (5a). Liaison is also impossible between a noun and a postnominal indirect-modification adjective\(^3\) in the DP (5b) (see also Selkirk 1972, 235):

(5) a. [les enfants] [ont faim]
   the children have hunger
   ‘The children are hungry’
b. [ [les marchands [de vins]] [italiens]]
   the merchants of wines Italian.PL
   ‘The Italian merchants of wines’

I propose three general rules to account for the liaison data:
A. two adjacent words are in an obligatory liaison context when they are in a head-head or in Spec-head configuration within the same maximal projection (XP);
B. liaison is optional when the two words have a “weaker” syntactic relation, provided that they occur within the same (extended) maximal projection; this is the case of a head and its complement;
C. liaison is ruled out when two words are not contained in the same (extended) maximal projection: impossible liaison is the result of the interference of syntactic boundaries between two words, which make them phonologically blind to each other despite their linear adjacency.

I would like to restate that only the optional liaisons and not the obligatory ones depend on sociolinguistic factors. At the same time, even though optional liaisons are influenced by the style of speech, the underlying conditions allowing for them are encoded in the syntax. Although infrequent in my corpus, optional liaisons are indeed possible, and this shows that some syntactic conditions permitting them are at work.

In contrast, impossible liaisons are blocked by syntactic constraints which completely prevent their occurrence (also in very formal contexts of speech). Thus, the distinction between optional and impossible liaisons becomes crucial in the syntactic investigation.

4. Liaison in the DP

4.1. Liaison with functional categories in the DP

Determiners and quantifiers are always in an obligatory liaison context with the following word, which can be either a noun, as in (6a-b) or an adjective, as in (6c-d):

(6) a. les oranges
   the oranges

\(^3\) In the next section, I deal with the interpretative differences between direct- and indirect-modification adjectives in detail.
The liaison triggered by a determiner or a quantifier cannot be reduced to the phonological realisation of number features: the examples in (6) demonstrate that liaison obligatorily occurs both in plural and in singular contexts, even though it is generally related to the overt realisation of plural features, and the determiner is mainly responsible for the realisation of plural features in French DP. I do not exclude that morphological conditions can play a role in triggering liaison. However, the trigger for obligatory liaison cannot be only morphological. Also Morin & Kaye (1982) note that liaison occurs in singular contexts where the syntactic conditions for its realisation are met.

Selkirk (1972, 209) proposes that the sequence article-noun is a basic (obligatory) liaison context, since articles have no word boundaries of their own, as shown in (7):

(7)  [# [Art] [ # [Noun] ] # ]
N'' N N N' N''

In line with this proposal, I note the absence of morphosyntactic boundaries which block the realisation of liaison between a functional and a lexical category in a head-head configuration. I thus conclude that liaison is sensitive to the functional nature of the triggering word. This demonstrates that phonological phenomena are not blind to underlying syntactic structure, and that the two levels “communicate” somehow.

4.2. Liaison with adjectives in the DP

When the adjective modifies certain classes of nouns (nationality nouns, for instance), the interpretation of the DP can be ambiguous. In ambiguous contexts, liaison helps to disambiguate the category of the words concerned:

(8) a. de vieux africains [dəvjozafrิก] of old.PL Africans
‘Old Africans’
b. de savants italiens [dəsavəzити] of clever.PL Italians
‘Clever Italians’
c. des vieux africains [devjoafrik] some old.PL African.PL
‘Some African old men’
d. des savants italiens [desavətalити] some scientists Italian.PL
‘Some Italian scientists’

(see also Selkirk 1972, 235)
In examples (8), the two elements can be either a noun or an adjective. If liaison is obligatorily realised between them, the first word is an adjective (8a-b); on the contrary, if liaison does not (necessarily) occur between them, the first word is a noun (8c-d). In other words, obligatory liaison only involves prenominal adjectives, while it is infrequently attested when the adjective is postnominal (see also Abeillé & Godard 1999, and Pomino & Stark 2009).

In the following subsections, I present a syntactic analysis which justifies this asymmetry. In order to account for the different liaison patterns with prenominal and postnominal adjectives, I adopt the cartographic approach proposed in Cinque (1994, 2010).

4.2.1. Prenominal adjectives

In line with the cartographic analysis proposed in Cinque (1994) and Crisma (1993), I treat French prenominal adjectives as direct modifiers of the noun, originated in the Spec of prenominal functional projections (FP) in the extended domain of the noun. Each FP is specialised in housing a precise class of adjective, and the FPs are hierarchically ordered. I adopt the adjective hierarchy suggested in Cinque, who draws on the proposal put forward in Sproat & Shih (1991) on the basis of a typological analysis:

(9) Quantification > Quality > Size > Shape > Colour > Provenance

The proposal in Crisma (1993) and Cinque (1994) is that the base position for adnominal adjectives is the same cross-linguistically, namely to the left of the basic position of the noun. The different linear distribution of adjectives in different languages depends on the movement of the noun across the adjective hierarchy. Hence, the DP in (10) displays the syntactic derivation presented in (11):

(10) a. le village de Beaulieu est en grand émoi
    the village of Beaulieu is in great agitation

    ‘There is a great agitation in the village of Beaulieu’
    [PFC: ID: 243886 Loc: 75ccr2, lecture]

(11) \[DP \left[ FP_{quant} \ F^0 \left[ FP_{qual} \ F_{shape} \ F_{colour} \ F_{prov} \ F_{NP} \right] \right] \]

    The structure in (11) shows that the landing site for noun movement is the head of the FP which contains the adjective in its Spec. In this structure, the obligatory liaison between a prenominal adjective and a noun arises as a consequence of their Spec-head configuration within the same FP.

    A further step in the discussion about prenominal adjectives consists in considering a different type of movement inside the DP. The analysis just provided perfectly holds assuming head movement (N-movement), but it seems to be challenged assuming NP-movement (Cinque 2010). If we exclude N-movement, we have to maintain that the noun does not raise alone to the head of the FP which hosts the adjective in the extended nominal projection:
However, in (12), the liaison is obligatory. This results in the implication that the FPs intervening between the prenominal adjective and the noun do not have any syntactic influence, and do not block the phonological process.

The prediction arises that liaison should be obligatory also when other "silent" FPs (for instance NumberP or GenderP) occur between a D-element or a Q-element and a prenominal adjective. This prediction is confirmed in the examples below:

(13)  
  a. ces énormes possibilités  
       these huge possibilities  
  b. tous autres commentaires  
       all.M.PL. other comments

Interestingly, prenominal adjectives share many morphosyntactic and semantic properties with functional elements (for instance, in many languages they are a "close-class")\(^4\). The liaison data give support to the functional nature of the adjectives in prenominal position: prenominal adjectives show the same liaison pattern as determiners and quantifiers, i.e. they are in an obligatory liaison context.

To sum up, if NP-movement is assumed, obligatory liaison has to be accounted for beyond a strict Spec-head configuration: a functional element is in an obligatory liaison context with the following lexical (or functional element) within the same maximal projection, irrespective of the presence of other "silent" FPs occurring between them. These FPs, which are present in the structure at an abstract level, do not constitute a syntactic boundary that blocks the phonological process.

In line with the first general rule proposed in section 3, I conclude that a functional and a lexical element in a Spec-head or in a head-head configuration within the DP are in an obligatory liaison context. Moreover, the possible presence of "silent" FPs between them does not make the two words "blind" to each other in phonological processes \(^5\).

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\(^4\) Weinrich (1966, 85-86) suggests that prenominal adjectives can be treated as morphemes (l'adjectif antéposé fait fonction de morphème) since they form a paradigm (a close class), they are frequent and relatively short (often monosyllables). Moreover, adjectives undergo semantic weakening in prenominal position (ils ont le status sémantique d'un morphème).

\(^5\) Obligatory liaison is also responsible for the phonological realisation of number features on the prenominal adjective. Pollock (1998, 315, fn. 24) argues that prenominal plural adjectives in French license null plural determiners, perhaps because they are in contexts of obligatory liaison (i):

(i)  
  a. J'ai lu de bons articles  
      I have read of good.PL articles  
  b. *J'ai lu d'articles  
      I have read of articles  
  c. J'ai lu *(des) articles  
      I have read of+the-PL articles  

When the adjective occurs in prenominal position in indefinite DPs, plural features are not realised on the determiner (which is null), but on the prenominal adjective. This suggests that both determiners
4.2.2. Postnominal adjectives

Selkirk (1972) reserves the liaison between a noun and a postnominal adjective to an elevated style of speech, and also in my corpus this context of application of liaison is infrequently attested. However, this liaison is possible under certain conditions.

In the example (14a), liaison is optional if the DP is interpreted as in (14b) and impossible if it is interpreted as in (14c). Following Selkirk (1972), we can observe that the DP in (14a) is ambiguous if the liaison is not realised: the adjective amusants can have either a descriptive (non-restrictive) function, and refer to all films of Jacques Tati – which are considered funny in general; or it can have a restrictive function, and refer only to the funny films of the director. In contrast, (14a) is unambiguous if liaison does occur: in this case, the postnominal adjective can only be interpreted as a descriptive one, and it must refer to all films of Jacques Tati, as in interpretation given in (14b):

(14)  
   a. (J’ai vu) les films amusants de Jacques Tati
       (I saw) the films funny.PL of Jacques Tati
       ‘(I saw) the funny films of Jacques Tati’
   b. (I saw) the films of Jacques Tati, which are (all) funny
   c. (I saw) the films of Jacques Tati which are funny [the funny ones]

The native speakers I interviewed about these delicate liaison contexts agreed with the distinction between the two possible liaison patterns for (14a): liaison between the noun and the postnominal adjective is optional if the phrase entails the interpretation in (14b), whereas it is impossible if the phrase entails the interpretation in (14c). Selkirk (1972, 235) already states that a plural noun will not be in a liaison context with an adjective not in its own complement. I will refer to the cartographic analyses proposed in Cinque (2010) to provide an up-to-date account of the syntactic restrictions that make liaison incompatible with the interpretation in (14c).

First of all, in order to investigate optional and impossible liaisons with postnominal adjectives, the direct vs. indirect opposition must be taken into consideration (see Cinque 2010): postnominal adjectives in French (as well as in other Romance languages) can be either direct or indirect modifiers of the noun, and they display different syntactic and semantic properties in the two cases.

and prenominal adjectives are responsible for the phonological realisation of plural features in the French DP, and thus they both are in a context of obligatory liaison. Similar morphosyntactic properties can be found in other Romance varieties. Pomino & Stark (2009) observe that in Occitan (ii) and in spoken Brazilian Portuguese (iii) the noun never inflects for number (number marker occurring on the determiner), while adnominal adjectives are marked for plural only in prenominal but not in postnominal position:

(ii)  
   Occ:  
   det-pl  dark.M.PL  dream.M  
   lei  sournei  pantai

(iii) Port:  
   det-m-pl  new.M.PL  student.M.SG.  
   os  novos  aluno

(Pomino & Stark 2009, 118)

The absence of a phonological realisation of number features on the noun across these Romance languages may lead to the conclusion that the noun does not bear number features at all in these varieties. However, as regards the French noun, it is important to underline that the plural inflection clearly emerges in some liaison contexts, despite their infrequency (cf. Morin & Kaye 1982, and Delfitto & Schroten 1991).
Before examining the direct vs. indirect contrast in detail, I note that this opposition did not systematically emerge in the patterns collected through the elicitation test, which targeted the spontaneous production of liaison. The difficulty to elicit these data arose as a consequence of the fact that the interpretation of the two types of modifier varies in a very subtle way, and native speakers are not immediately sensitive to this distinction. Nevertheless, when the informants were invited to reflect more in depth upon the effects that the modification had on the noun, it clearly emerged that the liaison pattern varied between direct and indirect modification adjectives, even though the informants did not have explicit knowledge of this alternation.

Keeping these premises in mind, we can now start a detailed analysis of the semantic and syntactic properties of direct and indirect modification adjectives. We can firstly consider the direct modifiers. As regards their semantic properties, they have an individual-level, non-restrictive, modal, non-intersective, absolute, evaluative and NP dependent reading, as observed in Cinque (2010). I adopt Cinque’s proposal also to define their syntactic properties. As I have already mentioned, he suggests that different classes of direct adnominal modifiers originate in the Spec of various dedicated functional heads in the extended nominal domain. These FPs are higher than the base position of the noun, and the final distribution of adjectives (prenominal or postnominal) depends on N (or NP) movement across the adjectives. In (15), the syntactic derivation for a postnominal direct modification adjective is provided:

\[
\text{DP} \left[ \text{FP}^{\text{quant}} \text{films} \right] \left[ \text{FP}^{\text{qual}} \text{amusants} \right] \left[ \text{FP}^{\text{size}} \text{F}^\circ \right] \left[ \text{FP}^{\text{shape}} \text{F}^\circ \right] \left[ \text{FP}^{\text{colour}} \text{F}^\circ \right] \left[ \text{FP}^{\text{prov}} \text{F}^\circ \right] \left[ \text{NP} \text{t} \right] \right]\]

The derivation proposed in (15) shows that, after N–movement has applied, only one syntactic boundary separates the noun from the postnominal direct modification adjective: the noun, moving from its base position, targets the head immediately higher than the FP which contains the adjective. It follows that, on the one hand, the two words are not in a Spec-head configuration, and thus the conditions for obligatory liaison are not met; but, on the other hand, the two words are both contained within the same extended nominal projection. Consequently, the syntactic conditions which allow for optional liaison are met. In conclusion, the liaison is optional between a noun and its direct postnominal modifier because the syntactic conditions which allow for (non-obligatory) liaison are fulfilled; however, the syntactic relation of the two words is not strong enough to require a compulsory application of liaison, at least in an informal style of speech. The actual realisation of liaison in this context depends on stylistic factors.

We can also note that, in this context, liaison is the phonological realisation of nominal plural features. The optional liaison between a noun and a postnominal direct modification adjective proves that the French noun does bear (abstract) number features, even though their phonological realisation is subject to precise phonological and syntactic conditions. I endorse Selkirk’s (1972) analysis, in which the liaison triggered by a noun is considered as the phonological realisation for the nominal plural marker, given that the noun triggers liaison only in plural contexts. Nevertheless, other hypotheses have been proposed against the idea that nominal number features are realised through [z] liaison. For example, Delfitto & Schroten (1991) claim that the occurrence of postnominal plural [z] liaison is close to statistical insignificance in the input addressed to children who acquire French as
As to indirect modification adjectives, these display opposite semantic properties, entailing a stage-level, restrictive, intersective, relative (to a comparison class), epistemic, discourse-anaphoric, implicit relative-clause reading (Cinque 2010, 19-23). As regards their syntactic properties, I follow Cinque (2010) in locating their source in a position higher than the extended projection of the noun (and lower than NumP), which is specific for (reduced) relative clauses (redRC): in Cinque’s (2010) proposal, this position is an IP containing a PRO and an AP. The postnominal position of indirect modification adjectives is the result of a movement involving the NP plus the projections with the direct modification adjectives in their Spec:

(16)


The structure presented in (16) shows how the indirect modifiers of the noun do not originate within the extended nominal domain, as the direct modifiers do. Moreover, after NP-movement, the derived structure changes for direct and indirect modification: we obtain (17a) for direct modifiers and (17b) for indirect modifiers:

(17) a. [NP [AP]]
   b. [NP [IP I° AP]]

Therefore, they suggest that French nouns and adjectives are not marked for plural “in the core case” and the realisation of number features within the DP exclusively relies on the D position. Although the determiner is mainly responsible for the phonological realisation of number features in the French DP, liaison involving a noun is not impossible. I interpret the possibility to realise the liaison after a noun as evidence of the fact that French nouns bear (abstract) number features, which are realised at the phonological level only in an elevated style of speech. Finally, Morin & Kaye (1982) claim that [z] liaison is not to be considered as the phonological realisation of nominal number features, since the [z] has been re-analysed as an optional, stylistically elevated mark of the plural for postnominal adjectives. According to Morin & Kaye, velours, i.e. liaison “mistakes”, give support to this hypothesis:

(i) des avions à réaction z-américains
    ‘American jet planes’

(Morin & Kaye 1982, 321)

However, it is possible that French speakers operate another kind of reanalysis: it is plausible that the NP avions-à-reaction has been re-analysed as a compound; in this case the [z] liaison is to be interpreted as the phonological realisation of plural features extended to the whole nominal compound.

Notice that indirect modification adjectives are equivalent to (restrictive) relative clauses:

(i) un film amusant de Jacques Tati = un film de Jacques Tati qui est/soit amusant
   a film funny of Jacques Tati
   ‘A funny film of Jacques Tati’ = a film of Jacques Tati which is funny

7 Notice that indirect modification adjectives are equivalent to (restrictive) relative clauses:
In (17b), the noun and the postnominal indirect modifier are not contained in the same extended nominal projection, since the adjective is in the extended projection of I°. Namely, more than one morphosyntactic boundary intervene between the two words.

In line with the third general rule proposed in section 3, we can conclude that the syntactic conditions allowing for liaison are not met in indirect modification, and liaison is thus ruled out irrespective of the style of speech.

4.3. To sum up: liaison in the DP

Within the DP, liaison is triggered by functional categories, i.e. determiners, quantifiers and prenominal adjectives: liaison mandatorily occurs between two words which are in a head-head (or in a Spec-head) configuration, both in plural and in singular contexts. Furthermore, functional elements are in an obligatory liaison context with the following lexical element irrespective of the presence of other "silent" FPs occurring between them.

Liaison is optional between two lexical categories which are not in a Spec-head configuration, but still belong to the same extended nominal projection, as in the case of a noun and its postnominal direct modifier. In this context, the application of liaison varies depending on stylistic factors.

Finally, the impossible contexts of application of liaison depend on the presence of syntactic boundaries which separate two lexical categories included in distinct maximal projections: this is the case of indirect modification adjectives.

5. Liaison in the IP

5.1. Liaison between a functional and a lexical category in the IP

In the analysis of the context of application of liaison within the DP, we observed that obligatory liaison particularly involves functional categories, which are in a head-head configuration with the following lexical category. We can extend this analysis to the IP, where liaison is obligatory between a subject pronoun and a finite verb (18):

(18)  a. elles aiment leurs enfants
      they love their children
  b. vous invitez vos amis à déjeuner
      you invited your friends to lunch

Compulsory liaison applies between a pronominal subject and a finite verb, irrespective of the style of speech: both in Standard and in Colloquial French, subject pronouns trigger obligatory liaison.

Interestingly, it appears that French subject pronouns are undergoing a developmental process which induces them to (partially) lose the syntactic properties of weak pronouns, and to assume those of clitic pronouns (for more details about the classification of pronouns in Romance languages, see Cardinaletti & Starke 1994). This developmental path is clearly revealed in the different syntactic behaviour that subject pronouns assume in Standard and in Colloquial French.
As for Standard French, Brandi & Cordin (1989) give evidence that subject pronouns are verbal arguments and behave as purely phonological clitics (see also Kayne 1975, 1983; Roberts 2010a). They draw this conclusion on the basis of three syntactic tests. Firstly, a lexical subject cannot be doubled with a subject pronoun (19a); secondly, in coordinated clauses, subject pronouns do not have to be repeated and only optionally occur before the second verb (19b); thirdly, the prenominal negation ne intervenes between the subject clitic and the finite verb (19c):

(19)  a. *Jean il chante
      John he sings
    b. Il chante et (il) danse
      he sings and (he) dances
    c. Il ne parle pas
      he not speak neg
      ‘He does not speak’

These syntactic tests show that subject pronouns in Standard French cliticise onto the finite verb only at a phonological level and not in the syntax.

Moving to (European) Colloquial French, Culbertson (2010) suggests that subject pronouns behave like verbal agreement markers, i.e. as inflectional heads which realise verbal agreement. Culbertson particularly analyses child-directed Colloquial French (Lyon Corpus), and observes that subject pronouns exhibit different properties in Standard and in Colloquial French with regard to the syntactic tests used in Brandi & Cordin (1989). Firstly, the preverbal negation ne is frequently dropped in the spoken language; secondly, the repetition of subject clitics in coordinated VPs is either strongly preferred or required; finally, clitic doubling is possible in Colloquial French and the co-occurrence of a DP and a subject clitic is attested in 81% of the sentences in the Lyon Corpus. The author thus

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8 Brandi & Cordin (1989) base their analysis of subject pronouns in Standard French on the comparison with Northern Italian dialects (NIDs). By means of specific syntactic tests, they conclude that subject pronouns behave as phonological and syntactic clitics in NIDs, and as mere phonological clitics in French.

9 In the framework of the Minimalist Program, Roberts (2010a) also adopts this analysis for Standard French, following a line of analysis which originates in Kayne (1983). Roberts (2010a, 107) observes that Standard French displays the typical configuration for a non-null-subject system (SCL[+agr] V[¬agr]), in which the verbal inflection is unable to identify a null subject. In this system, subject pronouns are considered as weak pronouns in SpecTP (Demin/max elements). They undergo purely phonological cliticisation, since they are unable to be defective goals in relation to T (see Roberts 2010a, 61).

10 Interestingly, Culbertson (2010) observes that the clitic negation ne is mainly dropped in the cases in which it would have intervened between a pronominal subject and a finite verb (6.3% ne-retention with subject clitics vs. 83.3% ne-retention with DP subjects).

11 In the Lyon Corpus, the repetition of the subject clitic in coordination concerns 98.4% of the clauses. Moreover, this phenomenon is not restricted to child-directed speech: in the PCF corpus, it is largely attested in coordination contexts (97%).

12 Since subject doubling is extremely frequent in child-directed speech, subject clitics are likely to be acquired as morphological affixes of the verb. Moreover, subject doubling also concerns adult-directed speech (60% of the sentences in the PCF corpus).
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concludes that the linguistic input addressed to L1 acquirers of French encourages the interpretation of subject clitics as markers of verb agreement, and this is crucial for the syntactic evolution of subject pronouns in French.

The test on subject doubling appears to be particularly relevant to define the syntactic status of the subject pronouns in different varieties of French. Also Roberts (2010a) observes that some varieties of Modern Colloquial French allow for doubling of the subject (as in some Northern Italian dialects). In Algerian French, doubling of the subject is extremely frequent—even if apparently not obligatory—even with quantifiers. This case of doubling is particularly telling because quantifiers unequivocally cannot be left-dislocated; therefore the example in (20) cannot instantiate a case of subject left dislocation:

\[(20)\quad \text{Personne il ne sait que c’est leur mère}
\quad \text{`Nobody knows that she is their mother’} \quad \text{(Roberge & Vinet 1989, 53)}\]

Furthermore, Renzi (1992) provides similar data for informal spoken French, which he defines as français avancé:

\[(21)\quad \begin{align*}
\text{a. Tous ils veulent venir} & \quad \text{‘Everybody wants to come’} \\
\text{b. Chacun il a sa chimère} & \quad \text{‘Anybody has his dream’} \\
\text{c. Faut que personne il pleure} & \quad \text{‘It is necessary that nobody cries’}
\end{align*} \quad \text{(Renzi 1992, 82)}\]

On the basis of these data, Culbertson (2010) argues for a diachronic grammaticalisation process of subject pronouns in Colloquial French: starting from a status of syntactically and phonologically independent pronouns, they then become clitics, and finally achieve the status of agreement affixes (see also Culbertson & Legendre 2012)\(^\text{13}\).

To sum up, on the basis of the three syntactic tests applied, we observe that pronominal subjects behave as weak pronouns (purely phonological clitics) in Standard French, whereas they behave as verbal agreement markers in Colloquial French. The relevant issue for my investigation is that, in both cases, the conditions for obligatory liaison are at work.

In Standard French, weak pronouns are in a Spec-head configuration with the finite verb. I endorse the split subject projection proposed in Cardinaletti (1997, 2004):

\[(22)\quad \begin{align*}
\text{[SubjP \{Jean/lui\} Subj° \{AgrSP \{il\} Vfin […]\}]} \\
\end{align*}\]

\(^{13}\) A similar continuous cline of grammaticalisation is indeed described in Vanelli (1998) for subject clitics in Northern Italian Dialects. In the sixteenth century, subject pronouns in these dialects displayed the syntactic properties found in today’s Standard French. In the course of their diachronic evolution, they changed their status from phonological clitics to phonological and syntactic clitics.
According to Cardinaletti (2004), more than one preverbal subject position has to be assumed: SubjP (Subject Phrase, the higher one) is the projection in which the “subject-of-predication” feature is checked, and thus hosts the semantic subject; AgrSP (the lower one) is the projection in which ϕ-features are checked, and thus hosts the grammatical subject, i.e. the subject bearing nominative case and verb agreement. Since different features are checked in the two subject positions, SubjP and AgrSP are expected to host different types of subject: while strong subjects are located in SpecSubjP, weak subjects are located in SpecAgrSP. Finally, clitic subject pronouns occur in the head AgrS°.

If we assume the structure proposed in Cardinaletti (2004), pronominal subjects in Standard French must be analysed as weak pronouns located in SpecAgrSP. Given that they are in a Spec-head configuration with the finite verb within the same functional projection (AgrSP)¹⁴, the conditions for obligatory liaison are met.

In Colloquial French, instead, subject pronouns are in AgrS°, so they are in a head-head configuration with the finite verb: more precisely, they are heads incorporated into the finite verb (see Roberts 2010a). Consequently, the conditions for obligatory liaison are met also in this variety of French.

We can thus conclude that liaison is obligatory between a non-lexical subject and a finite verb irrespective of the style of language. As regards Standard French, subject pronouns must be treated as weak pronouns in SpecAgrSP. In contrast, subject pronouns in Colloquial French (or français très évolué) must be considered as verbal inflection in AgrS°, as in certain Northern Italian varieties¹⁵.

In minimalist terms, subject pronouns in Standard French could be treated as weak pronouns ([D[φ]]) in SpecTP, while subject pronouns in Colloquial French could be analysed as subject agreement markers ([uφ]) in T. Obligatory liaison is justified in both cases by the Agree relation between the probe (verb) and the goal (subject pronoun). In an appropriate local configuration, Agree between the verb and the subject pronoun — which values the uninterpretable features of the verb — ensures a very close morphosyntactic relation, regardless of the landing site of the subject pronouns (see Roberts 2010a).

¹⁴ Roberts (2005) claims that two heads in a Spec-head relation — i.e. syntactically adjacent heads — can undergo incorporation. The consequence of incorporation is that the two heads become a unique head for all further (syntactic and phonological) operations, and excorporation is impossible.

(i) \[ TP \{ [TP D(P)] [TP V+T] ] \ldots [VP \ldots (V) (D(P))] \]

The same process is called m-merger in Matushansky (2006): m-merger is a purely morphological process involving linearly adjacent heads. Roberts instead suggests treating incorporation as a narrow syntax operation. However, Roberts (2010a) points out that incorporation is possible only if the probe (finite verb) and the goal (subject pronoun) share the same features: if the subject is a weak pronoun with a D-feature, incorporation is not possible. Only clitics — i.e. φ-elements — and not DPs can thus be incorporated to the verbal probe, since only clitics are defective goals for the finite verb.

¹⁵ If we assume that subject pronouns are indeed verbal agreement markers in Colloquial French, we have to treat this variety as a null subject language (NSL). Standard French, instead, can be considered as a fully NSL only in residual V2 constructions (such as left dislocation or interrogatives), in which clitics behave as verbal morphology and license pro under government from C. Standard French thus behaves as a NSL at the C level, and as a non-NSL at the T level (Roberts 2010b).

"
5.2. Liaison between two lexical categories in the IP

In 4.1., I showed that obligatory liaison applies between a pronominal subject and a finite verb as a consequence of their head-head or Spec-head configuration within AgrSP.

In contrast, in all varieties of spoken French, the liaison is impossible between a lexical subject and a finite verb, as already pointed out in Selkirk (1972) and in Durand & Lyche (2008):

\begin{enumerate}
\item a. [les rôles] [ont été inversées]
\begin{itemize}
\item the roles have been reversed
\end{itemize}
\item b. [les gens âgés] [ont droit à la retraite]
\begin{itemize}
\item the people old have right to the pension
\end{itemize}
\item c. jusqu’à ce que [votre enfant] [ait l’âge]
\begin{itemize}
\item until your son have3SG/SUBJ the age
\end{itemize}
\end{enumerate}

Selkirk (1972) observes that liaison behaves differently in the noun phrase and in the verb phrase. According to Selkirk, anything that occupies the specifier of the noun phrase is always in an environment of liaison, whereas liaison environments in the verb phrase seem to be much more restricted. I would like to demonstrate that a lexical subject and a finite verb are not in a Spec-head configuration within the IP.

In the previous subsection, I endorsed Cardinaletti’s (2004) proposal of a split subject projection. The liaison data give support to this analysis: on the one hand, pronominal subjects are always in an obligatory liaison context, whereas, on the other hand, lexical subjects never trigger liaison; consequently, pronominal and lexical subjects must target two distinct syntactic positions. The impossibility of liaison with lexical subjects suggests that morphosyntactic boundaries block their phonological link with the finite verb. Therefore, impossible liaison is fully compatible with the structure in (24), in which the lexical subject is located in a position higher than the pronominal subject, i.e. SpecSubjP.

\begin{enumerate}
\item a. [les rôles] [ont été inversées]
\begin{itemize}
\item the roles have been reversed
\end{itemize}
\item b. [les gens âgés] [ont droit à la retraite]
\begin{itemize}
\item the people old have right to the pension
\end{itemize}
\item c. jusqu’à ce que [votre enfant] [ait l’âge]
\begin{itemize}
\item until your son have3SG/SUBJ the age
\end{itemize}
\end{enumerate}

Given that AgrSP intervenes between the lexical subject and the finite verb, the liaison is ruled out in this context.\footnote{Following Cardinaletti (2004), the co-occurrence of a lexical and a pronominal subject would not imply subject doubling, since two positions are considered available for subjects in the IP.}

Alternatively, we may consider lexical subjects as always left dislocated, following the proposal in Benincà & Cinque (1985). This hypothesis is also compatible with the liaison patterns. In this case, the lexical subject would be located in a projection within the CP, which accounts for the impossibility of the liaison with the finite verb in AgrS°. The hypothesis that lexical subjects occupy the left periphery of the sentence implies that a null subject (pro) is present in every sentence: Benincà & Cinque (1985) assume that, if I° can license pro, it should license pro also when a lexical subject is already present in the sentence.

\begin{enumerate}
\item a. [les rôles] [ont été inversées]
\begin{itemize}
\item the roles have been reversed
\end{itemize}
\item b. [les gens âgés] [ont droit à la retraite]
\begin{itemize}
\item the people old have right to the pension
\end{itemize}
\item c. jusqu’à ce que [votre enfant] [ait l’âge]
\begin{itemize}
\item until your son have3SG/SUBJ the age
\end{itemize}
\end{enumerate}

Given that AgrSP intervenes between the lexical subject and the finite verb, the liaison is ruled out in this context.\footnote{Following Cardinaletti (2004), the co-occurrence of a lexical and a pronominal subject would not imply subject doubling, since two positions are considered available for subjects in the IP.}
I conclude this section confirming that the liaison patterns found in the IP conform to the general rules put forward in section 3: a functional category and a lexical category in a head-head or in a Spec-head configuration within the same maximal projection are in a context of obligatory liaison. In contrast, two lexical categories which do not belong to the same maximal projection are in an impossible liaison context.

Interestingly, a unified analysis allows us to account for the liaison data in different syntactic domains: the same rules hold for both the DP and the IP, and this suggests that the generalisation proposed can potentially apply to all syntactic domains.

6. Liaison in the vP-VP

The general rules proposed in section 3 can also be applied to the liaison contexts found in the vP-VP. For this domain, I provide data that concern only one context of application of liaison, i.e. the liaison which is realised between a transitive verb (synthetic form) and its internal argument.

The liaison between a transitive verb and its direct object is optional:

(25) a. Il portait un manteau
   he wore a coat
b. Vidéotron lançait une campagne d’embauche
   ‘Vidéotron launched a hiring campaign’
c. On fermait un établissement à Nancy
   it closed a plant in Nancy
   ‘A plant was closed in Nancy’

Selkirk (1972) includes this liaison in an elevated style of speech. Although sociolinguistic and stylistic factors do determine the realisation of liaison in this context, syntactic conditions are at work as well, and they make liaison (potentially) applicable. In line with the analysis proposed for the DP, the expectation is that the liaison is sensitive to the morphosyntactic boundaries which intervene between the finite verb and its direct object:

17 The data referring to liaison between a di-transitive verb and its complements are more uncertain: some native speakers accept the liaison in (i) for an elevated style of speech (see also Selkirk 1972), while the data in Morin & Kaye’s (1982) corpus support the impossibility of liaison in this context:

(i) a. il apportait un croissant à sa secrétaire
   he brought a croissant to his secretary
b. l’immigré envoyait un paquet (*t-un paquet) à sa famille
   the immigrant sent a package to his family
   [example from Morin & Kaye 1982, 292]

In the grammar of French speakers who do not accept the liaison in (i), we expect that strong morphosyntactic boundaries (like a small clause, SC) block the liaison:

(ii) [IP il apportait, [vP t, [SC[vP un croissant] [à sa secrétaire]]]]

If we apply to the VP the same analysis proposed for the DP and the IP, we may assume that the node SC intervening between the finite verb and its complements rules out liaison in this context.
The second general rule proposed in section 3 requires that optional liaisons apply when the words involved belong to the same maximal projection, without being in a Spec-head configuration. This is suitable for this context: the internal argument is the complement of V°, and the verb arguably leaves a trace (or a copy) in V° after raising to I°, where it gets finiteness. The possible application of liaison between a verb in I° and its internal argument in VP suggests that liaison is sensitive to the trace/copy that the verb leaves in V° after raising to I° (see also Masutti & Silvestri 2015).

As mentioned in the introduction, I will add some considerations on how the Phase Impenetrability Condition (PIC) could apply to this liaison context. I deal with PIC for my analysis of liaison in the vP-VP given that other sandhi phenomena which take place in this domain for other Romance varieties have already been analysed on the basis of PIC. I particularly refer to Syntactic Doubling in Easter Abruzzese (Biberauer & D’Alessandro 2006)\textsuperscript{18}. The PIC results from the following rule: “In a phase α with head H, the domain of H is not accessible to operations outside α; only H and its edge are accessible to such operations” (Chomsky 2000, 108). Note that after movement of the verb to I° (or to T°), the internal argument located in the complement of V° and the finite verb located in I° end up in two different phases; consequently, phonological operations between them should not be allowed. The syntactic conditions for optional liaison in this context are thus operating only if we envisage that a copy of the verb is present in V°, and that liaison is sensitive to its presence.

The cartographic and the minimalist analyses converge in pointing to the presence of a trace/copy of the verb in V°, which is able to trigger liaison with the following direct object in the grammar of an elevated style of speech.

7. Conclusions

In line with the proposal of Selkirk (1972), I considered the syntactic constituents and not (only) the phonological phrases as the domains of application of liaison (cf. Nespor & Vogel 1986). Selkirk (1972) claims that liaison operates when just one word boundary, #, separates Word1 from Word2; I aimed to define the nature of these syntactic boundaries on the basis of recent cartographic and minimalist analyses.

As an overall conclusion, I observed that the context of application of obligatory and impossible liaisons are exclusively determined by syntactic conditions, irrespective of the style of speech. In contrast, the application of optional liaisons depends on both syntactic and stylistic factors.

\textsuperscript{18} Biberauer & D’Alessandro (2006) consider how Syntactic Doubling applies between an auxiliary and a past participle, and how it interacts with active/passive voice. In the present study I will not analyse the application of liaison with auxiliaries, although an alternation of the liaison patterns with transitive and unaccusative past participles can be noted: as a preliminary observation, it appears that the realisation of liaison involves the auxiliary be with unaccusatives much more than the auxiliary have with transitives (see also Masutti & Silvestri 2015).
I have identified three general rules which define the contexts of application of liaison in different syntactic domains: liaison is obligatorily triggered by two words in a head-head or in a Spec-head configuration within the same maximal projection; liaison can optionally occur between a head (or the copy of a head) and its complement within the same maximal projection; liaison is ruled out between two words which do not belong to the same maximal projection, as more than one morphosyntactic boundary intervene between them.

Moreover, I have observed that liaison is sensitive to the functional nature of Word1. Obligatory liaisons particularly affect functional elements. Namely, liaison obligatorily occurs between a determiner, quantifier or prenominal adjective and a noun in the DP, and between a subject pronoun and a finite verb in the IP.

In the DP, liaison is sensitive to the direct/indirect nature of nominal modifiers, which display different syntactic sources and derivations. The conditions for optional liaison with postnominal direct modifiers, and the presence of syntactic boundaries blocking liaison with indirect modifiers are explained assuming the structures proposed in Cinque (2010).

In the IP, the opposition between the obligatory liaison with pronominal subjects and the impossible liaison with lexical subjects suggests that the latter occupy a position higher than subject pronouns within a split subject projection (Cardinaletti 2004). As for liaison with clitics, syntactic tests shows that French native speakers analyse pronominal subjects differently in Standard and Colloquial French (Cardinaletti 2004; Culbertson 2010; Roberts 2010a). However, liaison between a subject pronoun and the finite verb is obligatory regardless of the style of speech, and this suggests that syntactic and not stylistic factors determine their phonological link.

Finally, as regards the vP-VP, optional liaisons are attested between a transitive verb (in I°) and its internal argument (in the complement of V°). This suggests that the liaison is sensitive to the presence of copies, and that also a copy can trigger liaison after syntactic movement has applied.

References


A syntactic analysis for French liaison


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POLARITY FOCUS CONSTRUCTIONS IN ITALIAN

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Abstract: The article discusses the syntax and semantics of two Italian emphatic constructions, which I dub “Particle Initial Construction” (PIC) and “Particle Final Construction” (PFC). Interpretive evidence is presented that suggests that semantically they must be conceived of as involving polarity focus. Syntactically, a proposal that builds on Poletto (2008) is defended against a later alternative. The embedded distribution of the two construction is described and attempts are made to account for it. PFC is shown to display the distribution of most Main Clause Phenomena. PIC, on the other hand, is argued to have one further illocutionary component which bears some resemblances to the meaning of exclamatives.

Keywords: polarity focus, polarity particles, Main Clause Phenomena

1. Two constructions

The following sentences exemplify two constructions of Italian. They can be regarded as expressing ‘emphatic’ forms of affirmation or denial:

(1) PARTICLE INITIAL CONSTRUCTION (PIC)
Hai visto Gianni ieri sera?
‘Did you see Gianni last night?’
a. Si che l’ho visto.
yes that him-have seen
‘I did see him.’
b. No che non l’ho visto.
no that not him-have seen
‘I did NOT see him.’

(2) PARTICLE FINAL CONSTRUCTION (PFC)
Hai visto Gianni ieri sera?
‘Did you see Gianni last night?’
a. L’ho visto sì.

1 This article is a shortened and revised version of Chapter 3 from Servidio (2014), in which these constructions were discussed in the wider context of responding systems and in a broader comparative context. It does not include any discussion of more recent contributions, most importantly Garzonio and Poletto (2015). I thank the many people who contributed in improving this work: Adriana Belletti, Valentina Bianchi, Giuliano Bocci, Carlo Cecchetto, Liliane Haegeman, Luigi Rizzi. The tree diagrams were created with the packages qtree and tree-dvips for LaTeX2e.
The declarative sentences in (1) display *si* or *no* in initial position followed by the complementizer *che*. The sentences in (2), on the other hand, display the same particles in final position. Notice also that the complementizer *che* is absent. When we refer to both constructions, we will call them Particle Constructions (PCs).

As I said, the meaning of the constructions in (1) and (2) can be intuitively characterized as emphatic affirmation or denial. They are typically infelicitous when uttered out-of-the-blue. They are often used to reply to a statement to the contrary:

(3) Hai visto Gianni ieri sera.
    have seen Gianni yesterday night
    ‘You saw Gianni last night.’
    a. No che non l’ho visto.
        no that not him-have seen
        ‘I did NOT see him.’
    b. %Non l’ho visto no.
        not him-have seen no
        ‘I did NOT see him.’

(4) Non hai visto Gianni ieri sera.
    not have seen Gianni yesterday night
    ‘You didn’t see Gianni last night.’
    a. Sì che l’ho visto.
        yes that  him-have seen
Polarity focus constructions in Italian

‘I DID see him.’
b. L’ho visto sì.
   him-have seen yes
   ‘I did see him.’

The constructions can also be used to confirm a previous statement:

(5) a. Hai visto Gianni.
   You saw Gianni.
b. Sì che l’ho visto.
c. L’ho visto sì.

(6) a. Non hai visto Gianni.
   ‘You saw Gianni.’
b. No che non l’ho visto.
c. Non l’ho visto no.

Notice though that they can be used to emphatically answer a yes/no question:

(7) a. Hai visto Gianni ieri sera?
   ‘Did you see Gianni yesterday night?’
b. Sì che l’ho visto.
c. No che non l’ho visto.
d. L’ho visto sì.
e. Non l’ho visto no.

The choice of particle tightly correlates with the polarity of the sentence (positive vs negative). Mismatches give rise to unacceptability:

b. *Sì che non l’ho visto.
c. *L’ho visto no.
d. *Non l’ho visto sì.

As for the emphatic nuance associated with PCs, a proviso is in order. The literature on Italian and other Romance languages (Poletto 2008; Hernanz 2006, 2007; Hernanz and Batllori 2013; Schwenter 2005; Martins 2006, 2013) concurs in labeling PCs as emphatic constructions. It is not obvious, though, that, in virtue of such an emphatic nature, a definite set of interpretive properties should be expected to distinguish PCs from simple responses including responding particles. Real differences between the two classes are not easy to pinpoint. Bernini (1993) presents PIC and PFC as synonymous and even as mere

3 Poletto (2008) also proposes a paraphrase of the intuitive meaning of PCs in terms of evidentiality, see note 16 below.
This fact must be borne in mind in considering arguments on the interpretation on PCs. One could take the conservative view that the relevant notion of emphasis should be seen as the result of a pragmatic inference triggered by the choice of a marked option (a PC) over an unmarked alternative (a mere responding particle). Even though I will not elaborate on this in detail, neo-Gricean frameworks such as Horn (1984) and Levinson (2000) could model this effect quite straightforwardly.\(^4\)

Theoretical discussion and analysis of PCs have been presented in a series of works by Cecilia Poletto and Raffaella Zanuttini. A point-by-point comparison between these works is not viable, because their objects of study overlap only partially: Poletto (2008) deals with both PIC and PFC and, in addition, proposes an analysis of responding particles and polarity fragment answers.\(^5\) Poletto and Zanuttini (2013) focus solely on PIC.

Now, let me present the respective proposals in the most concise form. I will discuss arguments in support of each in later sections.

Poletto (2008) argues that PCs have *si* and *no* in a left peripheral focus projection. PIC and PFC differ only minimally, in that (a) in PFC a clausal projection is moved to the specifier of a peripheral topic projection (GroundP) and (b) a certain feature in FinP can be checked either by merge of the complementizer *che* (PIC) or by the movement of a clausal projection to the specifier of FinP on its way to GroundP.\(^7\)

\[(9)\]
\[\begin{align*}
\text{a. } & \text{[GroundP Ground [FocP NO [FinP [che... [IP non l’ho visto]]]]]} \\
\text{b. } & \text{[GroundP [IP non l’ho visto] [Ground [FocP NO [non l’ho visto]]]]}
\end{align*}\]

Poletto and Zanuttini (2013), on the other hand, analyze PIC as a biclausal structure. The complementizer *che* is taken to be merged in Force, just like its counterpart in embedded declaratives (Rizzi 1997). The whole ForceP is the complement of a PolP that hosts the particle. This PolP is included in a root ForceP.\(^8\)

\(^4\) Interestingly, Bernini (1993) goes as far as to present the availability of PIC and PFC as a diagnostic for the status of responding particles (in his terms, *profrasi*, ‘sentential proforms’). He also assimilates PCs to cleft structures. This intuition would in fact be reflected by an analysis of PIC along the lines of Poletto and Zanuttini (2013), in the light of the analysis of clefts proposed by Belletti (2009).

\(^5\) Namely, the inference could be triggered by Horn’s Q-principle:

\begin{quote}
The use of a marked (relatively complex and/or prolix) expression when a corresponding unmarked (simpler, less effortful) alternate expression is available tends to be interpreted as conveying a marked message (one which the unmarked alternative would not or could not have conveyed).
\end{quote}

Alternatively, consider Levinson’s M-principle, especially the Recipient Corollary: “What is said in an abnormal way indicates an abnormal situation, or marked messages indicate marked situations...”.

\(^6\) Poletto (2010b) is a revised version of Poletto (2008), but the differences are mostly expository, so every reference to Poletto (2008) in the main text can be safely meant to refer to Poletto (2010b) as well.

\(^7\) The moved clause is labeled IP for simplicity.

\(^8\) The authors also consider, as an alternative, the hypothesis that the particles might be hosted in a FocP in the higher clause. See below.
propose, must be coindexed to a null operator that binds the PolP in the lower clause. In addition, a silent Hanging Topic is posited in the higher clause whose content doubles the embedded clause:

\[(10) \quad [\text{HTP \{non l’ho visto\} \{\text{ForceP1 ... \{PolP1 no \{TP \{ForceP2 OP\} che \{TopP \{FocP \{PolP2 e non l’ho visto\}\}\}\}\}\}}}]

The proposal that I articulate in this article follows more closely the original analysis by Poletto (2008) in retaining its central insight, namely, that PCs express polarity focus. At the same time, I present arguments for amendments drawn both from Poletto and Zanuttini (2013) and my own research. Section 2 is devoted to arguments for the polarity focal nature of PCs. Then, I turn to the syntax of the constructions. In section 3, I argue for a variant of Poletto (2008)’s analysis of PIC against the one defended by Poletto and Zanuttini (2013). In section 4, I consider some options for the analysis of PFC, and I end up proposing an alternative to Poletto (2008). Section 5 formalizes the syntactic relation between the particles and PolP in terms of Agree and touches on the cartography of Polarity Focus. Section 6 discusses the distribution of PCs in embedded contexts, and shows that while PFC is a classic Main Clause Phenomena, PIC has additional restrictions that must be accounted for somehow.

2. Polarity focus

According to the Alternative Semantics (AS) approach to focus (after Rooth 1985), focus marking on a syntactic constituent is interpreted as introducing alternatives to the denotation of the focus constituent. In addition to its ordinary semantic value, a sentence including focus marking has a further meaning component called focus value, which consists in a set of propositions. These propositions are obtained by substituting for the denotation of the focused constituent alternative values of the same semantic type.\footnote{For exposition’s sake, I completely omit the compositional implementation of AS: the recursive definition of focus values, the squiggle operator and so on. See Rooth (1992a, 1997) for a detailed presentation and Krifka (2001) for an assessment of the adequacy of AS in capturing the relation between questions and answers.}

For illustration, consider the following sentence:

\[(11) \quad \begin{align*}
\text{a. John invited MARY} & \quad \{w \mid \text{John invited Mary in } w\}. \\
\text{b. } \langle \text{John invited MARY} \rangle & = \{w \mid \text{John invited Mary in } w\}. \\
\text{c. } \langle \text{John invited MARY} \rangle^f & = \{w \mid \text{John invited Mary in } w\}, \{w \mid \text{John invited Herman in } w\}, \{w \mid \text{John invited Lucy in } w\}, \{w \mid \text{John invited Mark in } w\} \ldots \}.
\end{align*}\]

The sentence in (11a) has an ordinary semantic value, the proposition that John invited Mary, expressed in (11b) as the set of possible world in which John invited Mary. The constituent Mary is marked as focal. The focus value of the sentence in (11a) is then (11c), obtained by substituting for Mary alternatives of the same semantic type (individuals).

At any given point, a dialogue involves a Common Ground (CG), a set of propositions taken to be true for the sake of the conversation by all the participants, and a stack of
Questions Under Discussion (QUDs). The QUD stack is an ordered set of unanswered questions. Discourse participants resort to two basic types of moves, assertion and question. When someone asserts that \( p \), if other discourse participants have no objections, \( p \) is added to the CG. When a question \( q \) is asked, if other discourse participants have no objections, \( q \) is added to the top of the QUD stack. The question on the top of the stack at a given time is the immediate QUD at that time (QUD for brevity). In order to be felicitous, moves in a dialogue must be congruent and relevant:

(12) a. A move \( m \) is congruent to a QUD \( q \) iff its focal alternatives are the alternatives determined by \( q \).
   
b. A move \( m \) is relevant to the immediate QUD \( q \) iff \( m \) either introduces an answer to \( q \) (\( m \) is an assertion) or is part of a strategy to answer \( q \) (\( m \) is a question).

In the tradition following Hamblin (1973), the denotation of a question \( q \) is a set of propositions, namely the set of possible answers to \( q \). The meaning of the requirement in (12a) is now apparent: it dictates that the focus value of an assertion (a set of propositions) must be identical to the denotation of the QUD. The relevance condition in (12b) further requires that an assertion (at least partially) answers the QUD. This predicts that the sentence in (11a) should be felicitous as an answer to (13a), but not as an answer to (13b):

(13) a. Who did John invite?
   
b. Who invited Mary?

Let us think of the denotation of (13a) and (13b) as the sets of propositions obtained by substituting individuals for the denotation of the \( \text{wh} \)-phrase (in object and subject position, respectively):

(14) a. \( \llbracket \text{Who did John invite?} \rrbracket = \{ w \mid \text{John invited Mary in } w \}, \{ w \mid \text{John invited Herman in } w \}, \{ w \mid \text{John invited Lucy in } w \}, \{ w \mid \text{John invited Mark in } w \} \ldots \} \).

10 The sketch that follows does not implement the dynamics affecting CG and QUDs in detail: the effects of moves on the dialogue structure are stated informally. It also does not take into account the differences between the models in the tradition.

11 For simplicity, here I am following Roberts (1998, 2012). The two semantic objects are actually identical only if both are contextually restricted in the same way. Rooth (1992b, 1997) defines congruence as the condition that the ordinary meaning of a question must be a subset of the focus meaning of the answer. Notice also that the formulation of (12) is actually more general: it encompasses both assertions and questions. It thus predicts that (i) is felicitous as a follow-up to (ii):

(i) Who did Mary\( F \) invite?
   
(ii) Who invited who?

This case does not concern us for the present purposes. The status of multiple \( \text{wh} \)-questions in Italian is controversial, and focus marking in interrogatives is a complex issue in its own right.
b. \[ \{ \text{Who invited Mary?} \} = \{ \{ w \mid \text{Mark invited Mary in } w \} , \{ w \mid \text{Lucy invited Mary in } w \} , \{ w \mid \text{Herman invited Mary in } w \} , \{ w \mid \text{John invited Mary in } w \} \ldots \} \].

The set in (14a) is the same set as the focus value in (11c), so (11a) satisfies the congruence requirement with respect to (13a). The set in (14b), by contrast, is different from the (11c), even though the two sets overlap (they share at least the element corresponding to the proposition expressed by \textit{John invited Mary}).

I propose that in particle constructions a polarity value is focused. One can think of the focus value of such a sentence as the set that includes a proposition and its negation (a proposition \( p \) and its complement \( \neg p \)):

\[
\{ \text{Gianni non è andato no} \} = \{ \{ w \mid \text{Gianni is going in } w \} , \{ w \mid \text{Gianni is not going in } w \} \}.
\]

So a sentence with focus on polarity has the ordinary semantic value of the corresponding non-focus marked sentence (a proposition) and a focus value that is a set including two propositions, one that expresses the meaning of a positive sentence and one that expresses the meaning of its negated counterpart. This makes it necessary to think of a focus value obtained by abstracting over the actual polarity value of the sentence, and by defining a set of propositions by substituting alternative values of polarity for the actual value. In Italian sentence polarity is encoded in a functional projection at the top of the IP field (Zanuttini 1997). The denotation of the Pol head itself can be thought of as a function from propositions to propositions. Negative polarity takes a proposition and outputs its negation, positive polarity is the identity function:

\[
\begin{align*}
\text{a. } & [\text{POL}_{\text{pos}}] = \lambda p. p \\
\text{b. } & [\text{POL}_{\text{neg}}] = \lambda p. \neg p
\end{align*}
\]

The complement of the Pol head denotes a proposition. The ordinary (non-focal) semantic value of the whole PolP is then a proposition. In sentences with focus on polarity, the position of the function undergoes abstraction:

\[
[\text{POL}_{f}(\text{Gianni non è andato})] = \{ f [\text{Gianni è andato}] \text{ with } f \text{ in } \{ \lambda p. p, \lambda p. \neg p \} \} = \{ \{ w \mid \text{Gianni goes in } w \} , \{ w \mid \text{Gianni does not go in } w \} \}
\]

The relevant domain for focal alternatives includes only two objects, positive polarity and negative polarity. Substituting both functions for the function variable in turn gives the intended denotation, as exemplified in (15).

Thinking of polar particle constructions as having polarity in focus makes it possible to account for their basic patterns of use. The congruence condition requires that an asserted polarity focused sentence have as its focus value the same set of alternatives that constitutes the denotation of the immediate QUD. This predicts that polarity focused sentences should be felicitous as answers to polar questions whose denotation is identical to their focus

\[12\] The proposed denotations are borrowed from Krifka (2001), where they are meant to represent the meaning of responding particles.
value. This prediction is borne out. Imagine the following scenario. Speaker A and B are taking part in a huge party. They comment on who is there and who is not. Imagine A does not know whether Gianni is there. He asks B:

(18)  a. Gianni è venuto?
    Gianni is come
    ‘Did Gianni come?’.

   b. i. Si che è venuto.
      yes that is come
      ii. No che non è venuto.
          no that not is come
      iii. È venuto sì.
          is come yes
      iv. Non è venuto no.
          not is come no

Speakers judge all the sentences in (18b) to be possible answers to the question in (18a), even though they sound somewhat marked with respect to answers that consist in just sì or no, alone or followed by other material. Notice that the question needs not be biased in any obvious way. One can safely assume that A genuinely ignores whether Gianni came, and asks B in order to get such information.

To see how polarity focus accounts for the pattern in (18), consider the focus value of the assertions in (18b), e.g.:

(19) \([\text{Gianni è venuto sì}]^f = \{\{w \mid \text{Gianni has come in } w\}, \{w \mid \text{Gianni has not come in } w\}\}.

Since the polarity value of the sentences in (18b) has been abstracted over, and is contrasted with its (only) alternative in the domain of polarities, all the sentences in (18b) have the same focus value. Such focus value is identical to the denotation of the question in (18a):

(20) \([\text{Gianni è venuto?}]^f = \{\{w \mid \text{Gianni has come in } w\}, \{w \mid \text{Gianni has not come in } w\}\}.

The congruence condition is thus met. Notice that the relevance condition is also met: all the sentences in (18b) are answers to (18b).

Given the congruence condition, the felicity of the exchanges in (18) is positive evidence for the analysis of particle constructions as polarity focal sentences. Negative evidence comes from the infelicity of the particle sentences as answers to questions that call for a focus other than a polarity focus in the answer. Consider a wh-question like (21a). For congruence to be met, it calls for an answer with a narrow focus on the subject (which must be postverbal in Italian, cf. Belletti 2004):

\[13\text{ Cf. Bernini (1993) and see section 1 above.}\]
(21)  a.  Chi è venuto?
    ‘Who’s come?’
b.  È venuto GIANNI.
    ‘Gianni has come’.
c.  #È venuto GIANNI sì.
d.  #Sì che è venuto GIANNI.

Congruence requires the answers in (21b-d) to have a narrow focus on the subject (here, Gianni). While (21b) with no particles is fine, PCs are infelicitous. A uniqueness constraint on foci exists in Italian: only one focus per sentence is allowed. If the polarity is focused, it follows that no other focus is allowed, hence the problem with (21c-d).14

Particle constructions are not compatible with a broad focus (‘all-focus’) either. Compare a regular declarative with PCs as answers to a very general wh-question:

(22)  a.  Che si dice?
    ‘What’s up?’
b.  Gianni non è venuto.
    ‘Gianni hasn’t come’.
c.  È venuto Gianni.
    ‘Gianni has come’.
d.  #Non è venuto Gianni no.
e.  #È venuto Gianni sì.
f.  #No che non è venuto Gianni.
g.  #Sì che è venuto Gianni.

The particle constructions are infelicitous in this context, while regular declaratives like (22b-c) are felicitous. Under my analysis, this is because broad focus sentences are congruent and relevant with respect to a question like (22a), while particle sentences, which have a narrow focus on polarity, are not.

In sum, pragmatic data concerning answers to polar questions support the analysis of the particle constructions as having polarity in focus. We still have to account for other contexts of occurrence of the particle constructions, namely as emphatic replies (confirmations or denials) to statements. Both particle constructions can be used in denials, i.e. to contradict an immediately preceding statement:

(23)  a.  Mario non è venuto.
    ‘Mario has not come’.
b.  i.  Sì che è venuto. (È di là in cucina).
    ‘He has come. (He’s there, in the kitchen)’.
   ii.  È venuto si. (È di là in cucina).

(24)  a.  Mario è venuto.
    ‘Mario has come’.

14 On the uniqueness of focus in Italian and its implementation, see Stoyanova (2008) and Bocci (2013). The latter, most relevantly, discusses the compatibility of the uniqueness constraint with the Alternative Semantics for focus.
b. i. No che non è venuto. (Quel tizio è suo fratello).
   'He has NOT come. (That guy is his brother).

   ii. Non è venuto no. (Quel tizio è suo fratello).
   'He has NOT come. (That guy is his brother).

In the terms of the approach to dialogue adopted here, one can see the meaning of (23a) and (24a) as propositions the first speaker offer as candidates for addition to the CG (remember that an asserted proposition is added to the CG if and only if it is accepted). By asserting (23b) or (24b), the interlocutor rejects the move of the first speaker, actually by asserting the opposite proposition. Under my analysis of particle constructions as polarity focal, the congruence conditions requires sentences like (23b) or (24b) to be used only when the corresponding polar question (paraphrasable as Did Mario come?) is the immediate QUD. While this might possibly be true of the latter examples, depending on the discourse history, so far nothing ensures that the same is true in general. Take the following dialogue:

(25) a. A: Chi ha mangiato il mio panino?
   'Who ate my sandwich?'

b. B: L’avrà mangiato Mario.
   'Maybe Mario ate it'.

c. A: Mario non l’ha mangiato no! È vegetariano.
   'Mario did not eat it for sure! He’s vegetarian'.

d. B: Ah, ho capito.
   'Oh, I see'.

Under my analysis, the felicitous use of (25c) requires the QUD Did Mario eat the sandwich? to be the immediate QUD. This does not seem to hold of the dialogue in (25), since the speakers are addressing the wh-question Who ate the sandwich?, which was added to the QUD stack by the question in (25a). How can (25c) be felicitous if it is not congruent to the immediate QUD? In fact, it can be safely assumed that the immediate QUD is just as required: Ginzburg (2012) argues that an assertion that \( p \) always raises the QUD \(?p\) (whether \( \bar{p} \)). This assumption is meant to account for the fact that felicitous, intuitively ‘well-formed’, dialogues often involve discussion of an asserted proposition, sometimes leading to rejection. Once the question \(?p\) is raised, the hearer can felicitously make moves that settle the question e.g. she can accept it (ultimately adding it to the CG) or she can reject it. Notice that an assertion that \( p \) raises the polar QUD \(?p\) independently of the focus marking in the original assertion. All this is empirically confirmed by the common crosslinguistic fact that the same responding particles (e.g., sì and no) can be used in answers and replies.\(^{15}\)

---

\(^{15}\) In this perspective, Inquisitive Semantics (Groenendijk and Roelofsen 2009; Roelofsen and Farkas 2015) is especially promising for its unified treatment of answers and replies: both questions and assertions are taken to introduce issues, which are then addressed by answers and replies. Issues, for our present purposes, can be regarded as equivalent to Questions Under Discussion. I will not attempt a description of PCs in terms of Inquisitive Semantics, both for the great number of technicalities involved, and for the lack of a widely accepted treatment of focus, which would make us lose a generalization (the analogy between polarity focus and other kinds).
In this section, I have shown that formal pragmatic diagnostics for information structure suggest that both PCs express polarity focus. Things being so, among the previous analyses summarized in section 1, the analysis in Poletto (2008), which assume particles are focal in both PCs, has a definite advantage over Poletto and Zanuttini (2013). It must be added, on the other hand, that Poletto and Zanuttini (2013) leaves open the possibility that the projection that hosts the particles in the main clause is a FocP, rather than a PolP. More precisely, particles would be merged in a PolP and moved to a FocP:

(26) 

This version of the analysis is compatible with the facts discussed in this section and, as such, should be preferred over the simpler one with particles in PolP.

3. Particle initial construction

In this section, I present a syntactic analysis of PIC that follows Poletto (2008) in most respects. I will briefly survey the arguments presented by Poletto and Zanuttini (2013) against Poletto (2008) and conclude that they are inconclusive and, on prudential grounds, the most conservative hypothesis should be privileged.

In the light of the discussion in the last section and the surface word order, I propose that the polarity particles in PIC are hosted in a left peripheral focus position. The left periphery of the Italian clause has been analyzed as including a series of information-structure and discourse related functional projections. Here is the scheme of the original proposal by Rizzi (1997):

(27) 

Let us consider the pattern of co-occurrence with left peripheral material:

    the book yes that it-have read
    ‘I HAVE read the book’.
  b. *Si il libro che l’ho letto

16 Apart from the issue of the position of the complementizer che, discussed below, the main difference is that I do not invoke any notion of evidentiality in treating the syntax and the semantics of PCs. See Servidio (2014) for discussion. In brief, there I suggest that the relevant facts should not be regarded as evidential as such (i.e., pertaining to the source and the nature of the evidence), but rather as epistemic. Namely, a constraint seems to be at work to the effect that the degree of confidence in the content of a PC must be high. Since evidentiality is not clearly distinct from epistemic modality in Italian, the confusion between the two domains is not unexpected.

17 The star on the topic labels is shorthand for a recursive series of topic projection. Later studies have argued for finer grained distinctions among left peripheral topics, and abandoned the assumption of recursion. See Benincà and Poletto (2004) and Frascarelli and Hinterhölzl (2007).
As one can see in (28), the particle can be preceded but not immediately followed by a clitic-resumed topic. Notice though that a familiar topic (Frascarelli and Hinterhölzl 2007) can follow the sequence particle plus complementizer.

(29) Si che il libro l’ho letto.

The fact that left peripheral material can precede the sequence particle-plus-complementizer makes it clear that che cannot be located in the position attributed to declarative finite complementizers by Rizzi (1997) (the head of ForceP). In the construction at hand the complementizer must occur lower. Poletto suggests che should be located in Fin, the lowest head in the left periphery, as some authors have argued to happen in other cases (Bellletti 2004 a.o.). One could reasonably propose that in PIC the complementizer actually occupies the head of the focus projection that hosts the particle. This would explain the fact that a topic can (for some speakers) occur after che but cannot occur between the particle and che. Thus, my proposal is that in PIC the polarity particle occupies the specifier of a left peripheral focus projection, whose head is lexicalized by the complementizer che. For concreteness, I follow Poletto in assuming that the relevant focus projection is the FocP of Rizzi (1997).

Poletto and Zanuttini (2013) also point out that sentences such as (29), which are accepted by some speakers, are incompatible with the hypothesis of che in Fin. They take it as evidence for their biclausal analysis, repeated and adapted in (30):

(30) [[TP [non l’ho visto] [TopP [ForceP1 ... [PolP1 no, [TP [ForceP2 OP i che [TopP [FocP [PolP2 e, non l’ho visto]]]]]]]]]]

18 Clitic left dislocation, in which a left peripheral topic is doubled by a clitic pronoun, is to be distinguished from other kinds of fronting that do not involve clitic resumption, Hanging Topic (Benincà and Poletto 2004) and adverb fronting (Rizzi 2004) among others. Among clitic left dislocated topics, different classes can be distinguished: see Frascarelli and Hinterhölzl (2007). A proviso is in order. Strictly speaking, I should follow Poletto and Zanuttini (2013) in giving examples with dislocated PPs, rather than DPs. The reason is that dislocated DPs can be either CLLD topics or Hanging Topics (Benincà at al. 1988; Benincà 2001), while PPs cannot be HTs. So, in order to ensure the CLLD nature of the examples, only PPs should be used. For naturalness, I will stick to DPs, but equivalent examples with PPs can be given:
(i) Di libri, sì che ne ho letti.
   of books yes that of-them have read
   ‘Books, I HAVE read some’.
(ii) *Si di libri che ne ho letti.


20 A residual technical issue is how to implement the obligatory presence of che in PIC sentences. Unlike some other frameworks, mainstream generative syntactic theory denies any theoretical significance to the notion ‘construction’. So the peculiar pattern of polarity particle plus che must be implemented in terms of the properties (features) of the two elements themselves. Notice though that this need is not unique to my proposal: analogous difficulties exist for analyses that locate che in Fin or anywhere else.
Topics can follow che, they argue, because che occupies Force. Topics preceding che, then, should be thought of as located in the higher clause. Notice though that my proposal (monoclausal structure, che in Foc), besides being more parsimonious, also predicts the fact that only familiar topics and not, say, contrastive or aboutness topics can follow che. The reason is that in the topic hierarchy articulated by Frascarelli and Hinterhölzl (2007) and Bianchi and Frascarelli (2007), topics that follow FocP must be familiar topics:

\[ \text{[ShiftP Aboutness-Topic [ContrP Contrastive-Topic [FocP Focus [FamP* Familiar-Topic [FinP [IP ... ]]]]]]} \]

4. Particle final construction

In the last section, a syntactic analysis of PIC has been presented that closely follows Poletto (2008). As for the analysis of PFC, I will proceed in an orderly fashion, by considering all the hypotheses logically available. As commonly assumed in the cartographic framework, I assume left- and right-adjunction to be unavailable to Universal Grammar (Kayne 1994; Cinque 1999). Under this assumption, final particles cannot be thought of as being right-adjointed to some suitable projection in the clause structure. Three hypotheses can be made then. A first hypothesis is that the particle might be located in the CP area (the left periphery), postulating the movement of a large clausal constituent to its left. This is the original proposal by Poletto. I will present counterexamples to this analysis.

A second conceivable hypothesis is for the particles to be located in the IP field, a portion of the clause that hosts a wide range of adverbs and related elements (Cinque 1999 a.o.). The surface order would result from the movement of the material generated in the vP to the left of the particle. This hypothesis would assimilate the polar particles under discussion to the modal particles discussed in Cardinaletti (2011). I will show that relative ordering restrictions on adverbs with respect to polarity particles cast doubts on this second analysis.

As a side remark, I will add one further piece of information that, if anything, seems to support the claim that the positions of the particles in PCs are not devoted to polarity: the distribution of particles in PIC is analogous to other constructions in which modal adjectives (interpreted epistemically) are followed by che:

(i) Magda è venuta alla festa?

‘Did Magda come to the party?’

a. Certo che è venuta.
   ‘Of course she did.’

b. Probabile che sia venuta.
   ‘Most likely she did.’

c. Possibile che sia venuta.
   ‘Perhaps she did.’

On the other hand, this pattern does not necessarily lend support to the claim that PCs are focal constructions. Poletto and Zanuttini (2013), who among various alternatives seem to favour the view of particles as propositional predicates, might well argue that the elements in (i) have adjectival morphology precisely because they are semantically predicates. I acknowledge this point. Cf. Hernanz and Batllori (2013) for discussion of Spanish and Catalan equivalents.
Finally, one could think of a much lower position. A reasonable candidate would be a functional projection just above the vP (Belletti 2004). I will argue for the latter hypothesis.

4.1 A left peripheral analysis

As for PFC, Poletto (2008) proposes a structure that differs from her analysis of PIC only minimally. The particle is located in the very same focus projection as in PIC, and the surface order is obtained by movement of a sentential projection (let us call it IP, for simplicity) to a left peripheral projection that she dubs GroundP, of a topic-like nature:

\[ (32) \]

In what follows, I present some syntactic arguments against the left peripheral analysis of PFC. The first, almost trivial, argument is that the analysis per se leaves the distribution of the complementizer unexplained. Second, some data concerning clitic right dislocation and marginalization in PFC show that the position of the particles must be c-commanded by various elements located in the IP field, in contrast to what assumed in the left peripheral analysis.

The two PCs do not differ only in the respective position of the polarity particle. They further differ in that PIC includes the declarative complementizer che while PFC does not admit che in any position:

\[ (33) \]

a. No *(che) non l’ho visto.
   b. (*che) non l’ho visto no (*che).

Without the complementizer, (33a) is unacceptable, at least without a clear prosodic break between the particle and the sentence, which would make it the Italian equivalent of No, I didn’t (see him). (33b) is unacceptable when preceded or followed by che.\(^{22}\) The

\[^{22}\] That a sentence final che is unacceptable should be almost obvious, given the typological properties of Italian, but I mention it because the string in (33b) might be the output of a derivation along the lines proposed by Poletto. Cf. analogous examples in Poletto (2010b).
Polarity focus constructions in Italian

(obligatory) presence vs absence of the complementizer in PCs must somehow be accounted for. Poletto postulates that FinP could be affected by a doubly filled Comp filter: the head position and the specifier position of FinP cannot be both occupied at the same time. According to Poletto, in PIC che occupies the head position of Fin. If the sentential constituent that moves in PFC moves to the Spec of FinP on its way to GroundP, it follows that che cannot be present in PFC sentences. In addition, one has to assume that Fin must be obligatorily spelled-out in PIC sentences, given the unacceptability of (33a). The analysis I will propose in section 4.3 has the advantage of not calling for the involvement of the left periphery in PFC sentences. So whatever fact or forces the realization of che in PIC sentences, it is not expected to apply to PFC sentences. Other differences between the two PCs, especially the differences in the embedded distribution discussed in section 6, also call for different treatments.

Notice also that GroundP is interpretively similar to a familiar topic, in that it involves given material. But the topic hierarchy (Frascarelli and Hinterhölzl 2007; Bianchi and Frascarelli 2007) posits familiar topics (givenness topics) below, and not above, left peripheral foci.

Let us turn to the second problem. PCs are compatible with clitic left and right dislocation:

(34)  CLITIC LEFT DISLOCATION
  a. Gianni, no che non l’ho visto.
      Gianni no that not cl3S-have seen
  b. Gianni, non l’ho visto no.
      Gianni not cl3S-have seen no

(35)  CLITIC RIGHT DISLOCATION
  a. No che non l’ho visto, Gianni.
      no that not cl3S-have seen Gianni
  b. Non l’ho visto no, Gianni.
      not cl3S-have seen no Gianni

In the cartographic framework both clitic left dislocation (CLLD) and clitic right dislocation (CLRD) involve dedicated topic projections (after Rizzi 1997). Many issues of detail are controversial. More specifically, the current analyses of CLRD fall under one of two different approaches.24

23 As for CLLD, the same proviso applies as in note 18 above. Since my arguments here revolve around CLRD, once again I will not bother to choose PP topics over DPs.

24 Examples like (34b) are real CLRD instances rather than so called afterthoughts. Evidence is the free ordering of dislocated elements, as opposed to the rigid ordering of afterthoughts (Cf. Bocci 2013):

(i)  Non gliel’ho dato no, il libro, a Gianni.
      not to-him-it-have given no the book to Gianni
      ‘I have NOT given the book to Gianni’.
(ii) Non gliel’ho dato no, a Gianni, il libro.
       not to-him-it-have given no to Gianni the book
Clause internal analyses of CLRD, defended by Cecchetto (1999) and Belletti (2004), assume that dislocated topics (Gianni in 35) are hosted in dedicated topic projections in the low IP area, just above the vP/VP (this area is often called ‘verb phrase periphery’). Dislocated constituents are thought to be moved there, after leaving their base positions. The simple CLRD sentence in (36) would then be analyzed as in (37):

\[
\text{(36) Non l’ho visto, Gianni}
\]

\[
\text{not him-have seen Gianni}
\]

\[
\text{‘I haven’t seen Gianni’}.
\]

\[
\text{(37) } \begin{array}{c}
\text{[NegP pro [ non l’ho [PartP [ visto [TopP Gianni [ Top [ vP … Gianni … ]]]]]]]}
\end{array}
\]

Clause external analyses (Frascarelli 2000; Cardinaletti 2002) also assume that dislocated elements are in dedicated topic projections, but these projections are supposed to be in the CP periphery. Ideally, these TopPs would be the same involved in CLLD. The surface word order (non l’ho visto, Gianni instead of Gianni, non l’ho visto) would be obtained by moving a large clausal constituent to a second, higher topic projection. This is why this approach is sometimes called ‘double topicalization approach’. The sentence in (37) would then be analyzed as follows:

\[
\text{(38) }
\]

\[
\begin{array}{c}
\text{The choice of one analysis of CLRD over the other has serious consequences for the tractability of (35b). A clause external analysis of CLRD is obviously congenial to the left}
\end{array}
\]

\[
\text{25 For brevity, I disregard the Big DP which is integral to the analysis. See the original articles for details.}
\]

\[
\text{26 More accurately, the same projections involved in a subclass of CLLD instances. Frascarelli and}
\]

\[
\text{Hinterhölzl (2007) show that while CLLD topics exemplify different sorts of topic (contrastive topic,}
\]

\[
\text{aboutness topic, familiar topic), CLRD topics always belong to the familiar class.}
\]

\[
\text{27 For the sake of generality, in the tree Gianni is shown to have moved from a VP internal object}
\]

\[
\text{position. It must be stressed, though, that Frascarelli (2000, 2004) argues that clitic dislocated topic}
\]

\[
\text{are base generated in left peripheral positions.}
\]
peripheral analysis of PFC. If the topic projection that hosts the dislocated constituent is structurally lower than the focus projection that hosts the particle, the surface word order of (35b) is obtained:

(39)

\[
\begin{array}{c}
\text{GroundP} \\
\text{NegP} \\
\text{NegP}_1 \\
\text{Neg} \\
\text{non l’ho} \\
\text{PartP} \\
\text{Part visto} \\
\text{vP} \\
\text{…} \\
\text{Foc} \\
\text{TopP} \\
\text{Gianni} \\
\text{Top} \\
\text{FinP} \\
\text{Fin} \\
\text{…} \\
\end{array}
\]

By contrast, a clause internal analysis of CLRD is incompatible with a left peripheral analysis of PFC. No clausal constituent can be moved to the left of the focus while stranding the right dislocated *Gianni* in a post-focal position (the vP peripheral topic projection is squared):

(40)

\[
\begin{array}{c}
\text{GroundP} \\
\text{NegP} \\
\text{NegP}_1 \\
\text{Neg} \\
\text{non l’ho} \\
\text{PartP} \\
\text{Part visto} \\
\text{TopP} \\
\text{Gianni} \\
\text{Top} \\
\text{vP} \\
\text{…} \\
\text{Foc} \\
\text{FinP} \\
\text{Fin} \\
\text{…} \\
\end{array}
\]
Principle C effects in CLRD sentences are often discussed in support of a clause internal analysis of CLRD. The relevant effects can be replicated in PC sentences. Take the following contrast:

\[(41)\]
\[\begin{align*}
\text{a. } & \text{La notizia che Gianni \(_i\) sarà licenziato, lui, non l'ha saputa no.} \\
& \text{\hspace{1cm} \text{The news that Gianni will be fired he does NOT know.}} \\
\text{b. } & \text{*Lui, non l’ha saputa no, la notizia che Gianni, sarà licenziato.} \\
& \text{\hspace{1cm} he not it-has known no the news that Gianni will be fired}
\end{align*}\]

According the current analyses of CLLD, in (41a) the dislocated topic is hosted in a left peripheral topic projection. Since the topic includes a DP coindexed with the subject, if the subject c-commanded the topic a Condition C violation would result. The acceptability of (41a) is thus evidence that the subject pronoun \(_lui\) does not c-command the left dislocated DP. By contrast, the unacceptability of (41b) can be explained if the right dislocated topic is c-commanded by the subject. If one compares the structures in (37) and (38) it is apparent that the subject pronoun does c-command the dislocated topic under the clause internal analysis but it does not c-command it under the clause external analysis. This argues for the adoption of a clause internal analysis of CLRD and, as a consequence, against a left peripheral analysis of PFC, given the incompatibility shown in (40).
These binding facts play against the left peripheral analysis of PFC: one cannot derive the surface word order and the relevant c-command configuration at the same time. The same point can be made by resorting to N-words. Like in other Romance languages, in Italian postverbal N-words have to be c-commanded by a high negative element in order to be licensed (Zanuttini 1997; Giannakidou 2005). This requirement can thus be used as a structural diagnostic test (Cardinaletti 2001). Consider the following exchange:

(42)  a.  (Non) hai visto nessuno?
not have seen anybody
‘Have you seen anybody?’.

b.  %Non ho visto no, nessuno.
not have seen no anybody
‘I have NOT seen anybody’.

As an answer to (42a), the most natural instance of PFC would be the following:

(43)  Non ho visto nessuno no.

To some, (42b) is acceptable too, but other speakers find it marginal. Let us try to account for the acceptability of (42b) (to some speakers). In a derivation along Poletto’s lines, the movement of the main body of the sentence to the left periphery would destroy the c-command of the marginalized nessuno, regardless of the position assumed for the N-word.31 Let us assume, for the sake of the argument, that nessuno is located in a projection higher than the moved IP projection and lower than the FocP that hosts no, so that the correct word order is obtained:

Here the offending element (the pronoun coindexed to Gianni) is not in subject position, but it is a clitic pronoun that incorporates onto the inflected auxiliary. In both sentences the dislocated topic is the DP la notizia che Gianni sarà licenziato, which is doubled by the accusative clitic lo. The dative clitic gli is a genuine argument of the ditransitive verb dare (to give), which happens to be coreferential with Gianni.

31 Actually, if (42b) is an instance of marginalization and marginalized objects are destressed in situ or structurally very low (Cardinaletti 2001, 2002), (42b) is also underivable, for the same reason why (35b) is underivable under a clause internal analysis of CLRD: See above.
The sentential negative marker *non* would not c-command *nessuno*. Licensing though is still necessary, as witnessed by the fact that omitting *non* yields an unacceptable result:

(45)  *Ho visto no, nessuno.
    have seen no anybody

To the extent that (42b) is acceptable, the point holds independently of the taxonomy of right edge phenomena (marginalization, right dislocation, afterthoughts), which is a controversial issue in itself.³²

4.2 Polarity particles and the IP field

In addition to the negative phrase that I have assumed thus far (henceforth, NEG1), Zanuttini (1997) and Cinque (1999) posit three more negative phrases interspersed in the IP area. Because of their positions, these lower NegPs are natural candidates for hosting the final particles. NEG2 is thought to host French *pas* and the so called presuppositional negation *mica* in Italian. The NEG2 projection is located just above the temporal-aspectual projection that hosts *già* (‘already’), as witnessed by the following example (I take the position of the past participle to be immaterial to the point at issue):

(46)  Non è mica già finita.
    not is mica already finished
    ‘It is not over yet’.

By contrast, the polar particle must follow *già*:

(47)  a.  Non è già finita no.
    not is already finished no
    ‘It is NOT over yet’.

³² Cf. for instance Cardinaletti (2001) vs Cardinaletti (2002) on whether marginalization of subjects is possible at all. To factor this issue out, a direct object is used in the main text.
b. *Non è no già finita.

NEG3 hosts the Piedmontese unmarked negative morpheme *nen*, among others. This projection is located just above a series of aspectual projections. Let us take the one hosting the adverb *sempre* (*always*):

\[(48)\]  
```
A l’ha nen sempre dine tut.  [Piedmontese]
```

The polar particle must follow *sempre*:

\[(49)\]
```
a. Non è sempre finita no.
not is always finished no
‘It is NOT always over’.
b. *Non è no sempre finita.
```

NEG4 is the lowest projection discussed in Zanuttini (1997). It is especially relevant to me, since it hosts a negative marker *no* in Milanese and other varieties. Milanese *no* precedes the lowest portion of Cinque’s adverbial hierarchy.\[34\] But the Italian low particle must follow even lower adverbs such as *bene* (*well*):

\[(50)\]
```
a. Non è finita bene no.
not is finished well no
‘It did NOT end well’.
b. *Non è finita NO bene.
```

\[(50)\] shows that the polarity particle in PFC follows even the lowest adverbs in the IP area. This excludes that the polarity particle is located in the middle-low portion of the IP field (the lowest half of Cinque’s hierarchy). The surface order is compatible either with a very low position of the particle (in the so called vP-periphery) or with a position in the highest portion of the IP field or higher. As for a very high, i.e., left peripheral position, see section 4.1. The objections I have discussed there extend to the hypothesis of a high IP position, with one notable exception. Cardinaletti (2011) discusses some modal or epistemic particles and, most relevantly, some particles that can occur sentence-finally. It is the case of *poi*, which occurs in initial or medial position in declaratives but can occur sentence-finally in interrogatives.\[35\]

\[33\] The example is Zanuttini’s.

\[34\] Arguments for the fine localization of Milanese and Pavese *no* are given in Zanuttini (1997), pp.87-8 and 93, respectively: NEG4 is shown to be lower than the projection hosting Italian *sempre* (*‘always’*) and higher than the projection hosting *tutto* (*‘all’*).

\[35\] Of course, this sets it apart from the particles in PFC, which is only exemplified in declaratives and to some extent in imperatives. This is immaterial though: it is at least conceivable that an analysis along the same lines could apply to PFC sentences.
(51)  a. Ha poi comprato la casa.
    have poi bought the house
    ‘Did he buy the house?’
  b. L’ha comprata la casa poi?
  c. L’ha comprata poi, la casa?

In (51b) poi is thought to be in its merge position, in a high IP projection. The sentence-final position in (51b) is derived through movement of the complement of the projection that hosts poi to the specifier of a projection immediately dominating it:

(52) \[
[XP \left[ ZP \text{L’ha comprata la casa}\right] \left[ X \left[ VP \text{ poi } Y \left[ XP \text{L’ha comprata la casa}\right]\right]\right]]
\]

As seen in (51c), the particle can be followed by a clitic right dislocated constituent. Unlike the left peripheral analysis I have discussed in section 4.1, Cardinaletti’s analysis is able to derive the correct word order while adopting a clause external analysis of CLRD. Suppose the right dislocated la casa is hosted in a left peripheral topic position and the particle is located lower, in the high IP field. The correct word order can be derived in two steps. First, the lowest portion of the IP moves to a projection that immediately dominates the particle, just like in (52). Then the whole structure moves to a left peripheral position higher than la casa:

(53) \[
\left[\text{TopP} \left[ XP \text{L’ha comprata poi}\right] \text{Top}\left[\text{TopP} \left[\text{DP la casa}\right] \text{Top}\left[\text{TopP} \left[ XP \left[ ZP \text{L’ha comprata}\right]\right]\right]\right]\right]\]
\]

An analysis of PFC along these lines does not seem viable though. First of all, notice that in the resulting structure the material included in the constituent labeled as XP does not c-command the right dislocated element, so the binding effects exemplified in (41) above would still be unexplained. Second, and most important, Cardinaletti’s analysis of poi and other modal particles builds on evidence that is not available for PFC: namely, the sentence-medial occurrence of poi shown in (51a), confirmed by the relative order of poi and a number of adverbs (see Cardinaletti 2011 for details). PFC never has the particle in that position: 36

(54) *Non l’ho no visto.

To sum up, two out of three structural hypotheses that I introduced at the beginning of section 4 have been discarded. On the one hand, there are arguments to the effect that in PFC particles are located neither in the high portion nor in the low portion of the IP field. On the other hand, I have argued in section 4.1 that the particles are not in the left periphery either. The last hypothesis available is for the final particle to be located in the vP-periphery.

36 Notice though that the positive particle si is acceptable in that position, with a different, concessive reading.
4.3 A right-peripheral analysis

I propose that particles in PFC sentences are located in a low focus projection, in the vP periphery (Cf. Belletti 2004 on Italian and Jayaseelan 2001 on Malayalam). Assume that the polarity particles sì and no enter the derivation endowed with a focus feature that must be checked in a Spec-Head configuration with a focus projection (Rizzi 2004; Aboh 2010). I will also assume that in PIC and PFC the particles are merged directly in the specifier of the left-peripheral and the vP-peripheral Focus projections respectively, where they check their focus features.37 In addition to this privative focus feature, a polarity feature must be postulated, in order to account for the obligatory matching in polarity between the particle and the clause that hosts it (see section 5 below).

Now consider the facts discussed in the previous subsections. First, take the ordering facts in section 4.2. The vP-peripheral analysis accounts for the fact that polarity particles follow IP-internal adverbs: unlike the projections that host Zanuttini’s negative markers or Cardinaletti’s modal particles, the functional projections of the vP periphery are lower than the functional projections of Cinque’s hierarchy. Consider now the problems for a left peripheral analysis. The absence of the complementizer che in PFC is not unexpected anymore. Regardless of the technical reasons that force the presence of che in PIC, these would not apply to PFC.

In section 4.1, Principle C effects showed that in PFC sentences a right-dislocated DP is c-commanded by preverbal subjects and other IP-internal elements (proclitic pronouns). Under the present proposal, the relation does hold (the relevant examples are repeated here):

\[(55)\]
\[
\begin{align*}
\text{a. } & \text{[XP Lui [ non l'ha [PartP saputa [FocP no [TopP la notizia che Gianni i sar\'a licenziato.]]]]]} \\
\text{b. } & \text{[XP pro [ Non gli-elo ho [PartP data [FocP no [TopP la notizia che Gianni i sar\'a licenziato.]]]]]}
\end{align*}
\]

Assuming a clause-internal analysis of CLRD, the dislocated phrase is in a topic position in the vP periphery, lower than the focus projections that hosts the particle. Both the subject in (55a) and the dative clitic in (55b) c-commands the dislocated phrase.

Let us turn to the N-word pattern. If one takes the marginalized N-word object to be structurally lower than the FocP that hosts the particle (it is in situ according to Cardinaletti 2002), the sentential negation c-commands it:

\[(56)\]
\[
\text{[XP Non ho [PartP visto [FocP no [vP visto nessuno]]]]}
\]

Before I move on, some clarification is in order about the typology of focus. Up to this point, I have treated the foci involved in the two PCs as semantically and pragmatically identical, even though the relative functional projections are located in different layers of clause structure. In a way, this is unexpected. An information focus projection has been argued to exist in the Italian vP periphery (Belletti 2004), but much literature agrees on the

37 As far as I can see, given that polarity particles are non argumental and unselected, nothing prevents them from being merged directly in an A’ projection. In support, see the analysis of sì as an expletive focal element in Old Italian in Poletto (2010a).
point that left peripheral foci in Italian have one or more interpretive property that mere foci do not necessarily have. The identification of such properties, though, is far from trivial. The canonical examples of left peripheral foci from Rizzi (1997), usually dubbed ‘contrastive’, are corrective in nature (Bianchi 2013; Bianchi and Bocci 2012). Other candidate properties are noteworthiness and unexpectedness (Bianchi et al. 2014). One can reasonably ask oneself how PCs are to be classified in terms of focus typology. Clearly, neither PIC nor PFC are bound to express corrective moves. While both of them can be used to express a correction, they can also be used to answer a (genuine, information-seeking) polar question, which is a paradigmatic example of a non-corrective move. On the other hand, it is not obvious that PCs have to be considered examples of information focus (‘mere’ focus). The reason is that many additional constraints often postulated for more specific subtypes of focus are trivially satisfied by polarity focus. Polarity values are only two, always the same and, presumably, made salient by the very raising of a polar QUD. So, polarity focus is trivially contrastive. Polarity values are mutually exclusive, so an statement that expresses polarity focus always satisfies exhaustivity, which is often attributed to some natural language focal constructions, such as Hungarian left peripheral focus (Kiss 1998) and clefts (Belletti 2009 a.o.). Prudentially, I will leave the matter unsettled.

To sum up, a VP-peripheral analysis of PFC accounts for the basic patterns discussed in the previous sections. It also stays faithful to the original intuition by Poletto (2008) that PFC is a focal construction: only, the proposed cartography of focus is different.

5. Polarity features

As shown in (8), repeated here as (57), in PCs polarity particles must share the value of polarity (positive or negative) of the clause:

(57)  a. *No che l’ho visto.
b. *Si che non l’ho visto.
c. *L’ho visto no.
d. *Non l’ho visto sì.

In Italian the polarity of a clause is thought to be encoded in a functional projection in the highest portion of the IP field (Zanuttini 1997). Some sort of relation should be enforced between the content of this projection and the polarity particles in order to ensure that the respective values match.

38 The terminology of focus and information structure in general is complicated and often inconsistent (Erteschik 2007). Contrastive foci are often meant to be foci such that the focused element is contrasted with a contextually salient set of alternatives, which is nothing beyond Rooth’s definition of focus tout court (see section 2).

39 Plausibly, polarity focus is also expected to trigger an existential presupposition (often attributed at least to some kinds of focus, see Rooth 1997): every sentence radical that expresses p must have a polarity value, since it is always that the case that either p is true or ¬p is true. Readers interested in philosophy might object to the realist and bivalent notion of truth assumed here. I think that it is fair to suppose that such view captures essential aspects of everyday linguistic use, which is not to say that it is the best per se.
I would like to pursue an analogy between this polarity matching pattern in PCs and negative concord (NC). In Italian a postverbal N-word must be licensed by a negative-like element that c-commands it. In the simplest case, and the only one that I will address here, the licensor is the sentential negation *non*:

\[(58)\]
\[
\begin{align*}
\text{a. } & \text{Non è venuto nessuno.} \\
& \text{not is come nobody/anybody} \\
& \text{‘Nobody came’}. \\
\text{b. } & \text{*È venuto nessuno.} \\
& \text{is come nobody/anybody}
\end{align*}
\]

N-words, as their name suggests, are morphologically marked as negative, but in (58) a single negation is interpreted. In this respect, the examples in (58) are similar to negative PCs.

Various theoretical approaches exist to NC phenomena. I would like to draw the reader’s attention to the so-called syntactic approach to NC, which takes NC to be the result of a syntactic relation between formal features of the licensor and the licensee. In the literature, this relation is taken to be an instance of the minimalist operation Agree (Haegeman and Lohndal 2010; Zeijlstra 2008; Moscati 2010). The theories of Agree differ along two dimensions at least. First, the dynamics of the operation: whether the probe must c-command the goal (Chomsky 2001; Pesetsky and Torrego 2007), or vice versa (Zeijlstra 2008), or rather both configurations are allowed (Haegeman and Lohndal 2010). Second, whether the relevant properties of the feature on the probe is uninterpretability or lack of value, and whether these property are always to be identified (Chomsky 2001; Haegeman and Lohndal 2010; Zeijlstra 2008) or not (Pesetsky and Torrego 2007).

To model the polarity matching in PCs I resort to the definition of Agree in Haegeman and Lohndal (2010), together with the feature format proposed by Pesetsky and Torrego (2007). The definition of Agree is the following:

\[(59)\] \text{AGREE} \[
\begin{align*}
\alpha \text{ Agrees with } \beta \text{ if } \alpha \text{ c-commands } \beta, \alpha \text{ and } \beta \text{ both have a feature } F, \text{ and there is no } \gamma \\
\text{with the feature } F \text{ such that } \alpha \text{ c-commands } \gamma \text{ and } \gamma \text{ c-commands } \beta.
\end{align*}
\]

As one can see, no mention is made of the respective interpretability/valuation of the probe and the goal. In principle, this allows for an interpretable instance of a feature to c-command an uninterpretable instance, but also vice versa.42

40 Notice though that there could be reasons to use theoretical tools other than Agree to account for NC. For clarity, I want to make clear that I am not even necessarily advocating a syntactic approach to NC: rather, I am borrowing elements of such family of analyses of NC to describe my current object of research, i.e., PCs.

41 On the format of features in the minimalist program, see Adger and Svenonius (2010).

42 The definition also allows for Agree between two uninterpretable instances of a feature. In my treatment of PFC, that would be the case of PC sentences with postverbal N-words e.g. *Non ho visto nessuno* no.
As for the format of features, Haegeman and Lohndal (2010) use privative features specified for interpretability. I adopt the format of Pesetsky and Torrego (2007): features are attribute-value pairs. Interpretability and valuation are independent properties, so four combinations are admitted (valued interpretable, valued uninterpretable, unvalued interpretable, unvalued uninterpretable). Two further ingredients of this approach are the notion of Feature sharing and the Thesis of Radical Interpretability. The authors propose that the application of Agree results in Feature sharing, understood as token-identity of features. Two agreeing features are one and the same (complex) syntactic object, composed of two instances of the same feature. This is notated by assigning them an arbitrary numeric index. The Thesis of Radical Interpretability (RI) dictates that each feature must receive a semantic interpretation in some syntactic location. Occurrences of uninterpretable features are illegible to interfaces, but the application of Agree results in complex occurrences in which one feature may be interpretable in one location and uninterpretable in another. This satisfies RI.

To account for the matching facts in (57), I propose that the attribute Polarity can be valued as either positive or negative. Like N-words, the polarity particles *sì* and *no* have an uninterpretable polarity feature, positive and negative respectively. RI requires one occurrence of such features to enter Agree with an interpretable occurrence of a polarity feature of the same value. The relevant interpretable occurrence is the one encoded in the polarity projection in the IP field: let us call it PolP. Under the definition of Agree in (59), the interpretable feature can either c-command the uninterpretable feature or be c-commanded by it. This would be the case in PFC and PIC respectively. The result of the application of Agree is the following:

\[(60)\]
\[
\begin{align*}
\text{a. } & \text{No}_5[\text{POL:Neg}] \text{ l’ho visto } \text{no}_5[\text{POL:Neg}]. \\
\text{b. } & \text{No}_7[\text{POL:Neg}] \text{ che } \text{non}_7[\text{POL:Neg}] \text{ l’ho visto.}
\end{align*}
\]

The positive counterparts should be analyzed in the same way. I take the positive PolP to be projected by a phonologically null head, specified in the lexicon as iPOL:Pos:

\[(61)\]
\[
\begin{align*}
\text{a. } & \text{po}_9[\text{POL:Pos}] \text{ l’ho visto } \text{si}_9[\text{POL:Pos}]. \\
\text{b. } & \text{si}_8[\text{POL:Pos}] \text{ che } \text{po}_8[\text{POL:Pos}] \text{ l’ho visto.}
\end{align*}
\]

In section 2, I have introduced the hypothesis that PCs are interpreted as having the polarity value of the clause in focus. The syntactic locus of the encoding of polarity is PolP (notated as NegP in the tree diagrams above). Notice though that in a PC sentence it is the particle that is located in a focus projection and is prosodically realized as focused, rather than the element expressing PolP (namely, *non*). I have proposed that the particles are endowed with a focus feature that must be checked in a focus projection. How can the focal feature be ‘passed’ on the interpretable locus of polarity that interface operations abstract over to get the required semantic object? The key is the notion of feature sharing introduced here. After Agree applies, the particle and the head of PolP come to share a token-identical feature. One and the same object becomes the value of both feature instances. Since the instance on the particle is, by assumption, uninterpretable, the interpretable instance on
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PoP is interpreted instead. One could think that, since the particle is a mere polarity marker, the focus interpretation rule applies to the syntactic object that shares the token-identical polarity value of the particle itself. The implementation would require some work, but I will leave it to further research.

One last topic of interest are the various kinds of elements that do not seem to be acceptable in PCs. Quantifiers cannot occur preverbally in negative PIC or PFC:

(62) Qualcuno non sta bene?
    ‘Is anybody not feeling well?’
    a. *No che qualcuno non sta bene.
        no that somebody not is well
    b. *Qualcuno non sta bene no.
        somebody not is well no

(63) Tre ragazzi non stanno bene?
    ‘Are three kids not feeling well?’
    a. *No che tre ragazzi non stanno bene.
        no that three kids not are well
    b. *Tre ragazzi non stanno bene no.
        three kids not are well no

(64) Ti ha contattato ciascuno dei membri della giuria?
    you has contacted each of the members of the jury
    ‘Did each of the members of the jury contact you?’
    a. *No che ciascuno dei membri della giuria non mi ha contattato.

44 In evaluating examples of PCs with quantifiers and N-words it must be taken into account that, in general, alternations induced by negation, such as quantifier duality or the N-word vs indefinite pattern, make for infelicitous uses of PCs, especially PIC:

(i) a. Sono venuti tutti?
    are come all
    ‘Did everybody come?’
    b. No, qualcuno non è venuto.
        no somebody not is come
    c. *No che qualcuno non è venuto.
        no that somebody not is come

(ii) a. È venuto qualcuno?
    is come somebody
    ‘Did anybody come?’
    b. No, non è venuto nessuno.
        no not is come nobody
    c. *No che non è venuto nessuno.
        no that not is come nobody

I will not deal with this fact. Suffice it to say that this might be evidence for the ‘echoic’ character that Hernanz (2007) postulates for a Spanish construction prima facie similar to Italian PIC.
The same holds of preverbal N-words, which are interpreted as negative quantifiers:

(65)    Nessuno è venuto alla festa
    nobody is come at-the party
    ‘Nobody came at the party.’
   a.  *No che nessuno (non) è venuto.
    no that nobody not is come
   b.  *Nessuno (non) è venuto no.
    nobody not is come no

The result is once again unacceptable. Notice, also, that this holds regardless of the presence or absence of the sentential negation non, with a proviso: relative scope seems to play a role. Some quantifiers are acceptable preverbally in PCs to the extent that they can be interpreted with inverted scope with respect to the sentential negation:

(66)    a.  %No che tutti non sono venuti (ne saranno venuti la metà.)
    no that all not are come
    ‘All of them did not come (maybe half of them did.)’
    b.  %Nessuno non è venuto (molti invitati li ho visti con miei occhi.)
    nobody not is come
    ‘I wouldn’t say that nobody came (I’ve seen many guests with my own eyes.)’

Notice that the following hybrid PIC, with a positive particle and a negative clause, if marginal, is comparatively more acceptable than the examples in (62):

(67)    Qualcuno non sta bene?
    ‘Is anybody not feeling well?’
    a.  ??Sì che qualcuno non sta bene.

In the light of the approach adopted in this section, the relevant intervention effect can be to a good extent assimilated to the well-known Immediate Scope Constraint on the licensing of NPIs and similar words: Linebarger (1987) shows that the NPI licensing is disrupted by the intervention of a scope-bearing element between the licensor and the licensee. In my treatment, the licensees are the particles. Since I am assuming that the direction of the licensing can be either upward or downward, both configurations in (68) and (69) must in principle be relevant, with OP a scope bearing element:

\[\text{\textsuperscript{45}}\text{Positive polarity (if syntactically represented at all) is given the identity function as denotation. Notice, on the other hand, that the identity function could apply in principle either below or above another operator, so even though the output is the same in either case, it could still be the case that an operator vacuously interacts with positive polarity in terms of scope. That the scope constraint does not affect positive polarity is suggested by the fact that positive PCs with preverbal non-specific quantified subjects are sometimes better than their negative counterparts.}\]
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(68) \( \text{non}_{\text{POL:Neg}} \ldots \text{OP} \ldots \text{no}_{\text{POL:Neg}} \)

(69) \( \text{No}_{\text{POL:Neg}} \ldots \text{OP} \ldots \text{non}_{\text{POL:Neg}} \)

The particle \textit{no} needs licensing from an interpretable negative Pol, and this relation cannot hold with the intervention of a scope bearing element. As for PIC, one can assume that the Agree relation between the particles and Pol is disrupted by the presence of the quantified subject, (the relevant configuration being (69)). The marginal acceptability of (67a) would then be a Last Resort measure: the Merge of a second Pol, bound by \textit{si}. The analogous unacceptability of PFC calls for a minimally different explanation. If an intervention effect must be hypothesized, one can assume that the crucial Agree application in PFC occurs between the PolP that hosts \textit{non} and a higher instance of Pol that is located on Force (Moscati 2010), and which must be present for clause typing reasons. This gives rise to a configuration in (70):

(70) \( \text{Force}_{\text{POL:Neg}} \ldots \text{OP} \ldots \text{non}_{\text{POL:Neg}} \ldots \text{no}_{\text{POL:Neg}} \)

Incidentally, feature intervention might also be key in accounting for the clause-boundedness of the constructions. Consider the following:

(71) Magda ha detto che Luca sarebbe venuto, vero?
    'Magda said that Luca would come right'
    a. Sì che qualcuno verrà.
       yes that somebody will-come
    'I don’t know who, but I think somebody is going to come.'
   i. Non so chi, ma penso che qualcuno verrà.
      not know who but think that somebody will-come
      'I don’t know who, but I think somebody is going to come.'
   a. Si che qualcuno verrà.
      yes that somebody will-come

(ii) Non so chi, ma penso che qualcuno non verrà.
    not know who but think that somebody not will-come
    a. *No che qualcuno non verrà
       no that somebody not will-come

Another problem is that PCs differ from instances of NPI licensing in one major way. Take the following contrast:

(iii) a. *Nessuno è venuto no.
       nobody is come no
    b. Nessuno ha comprato niente.
       nobody has bought nothing
       'Nobody bought anything.'

In the light of the fact that preverbal N-words seem (at least \textit{prima facie}) to be interpretably negative, one would expect that they should be able to license a postverbal N-word, which on the other hand needs licensing. Why does this not hold of \textit{no}? Descriptively, I can only take notice that for some reason in PCs the only suitable licensor is the sentential negation \textit{non}: other interpretable negative operators, even if semantically analogous, are no good. This does not follow from my analysis as such: there seems to be a constructional residue in PCs that is left unanalyzed.
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a. Magda non l’ha detto no, (che Luca sarebbe venuto.)
   ‘Magda did NOT say it.’
b. ?*Magda non ha detto che Luca sarebbe venuto no.
   ‘Magda did NOT say that Luca would come no’

(71b) would have a positive Pol head in the embedded clause, which would intervene between non and the final particle:

(72) ?*Magda nonPol:Neg ha detto che Luca PolPos sarebbe venuto noPol:Neg

6. Embedded distribution

Neither PC is generally available embedded (for brevity, only the negative constructions are exemplified): 46

(73) a. *Se no che non viene, faremo a meno di lui.
   ‘If he is NOT coming, we’ll do without him’.
b. *Se non viene no, faremo a meno di lui.
   ‘If he is NOT coming, we’ll do without him’.

46 More precisely, they are limited to root declaratives. They are always unacceptable in interrogative sentences:

(i) *No che non è venuto?
   no that not is come
(ii) *Non è venuto no?
    not is come no

(ii) is not to be confused with sentences with the interrogative tag no?, which are prosodically very different.
Notice also that PFC is allowed in imperatives:

(iii) Non venire no!
    not come no
(iv) *No che non venire
    no that not come

Since a suppletive infinitive form substitutes for the negative imperative in Italian, the unacceptability of (iv) might conceivably be a trivial consequence of the fact that PIC requires a finite verb. As for the positive counterparts (e.g. si che vieni!, ‘DO come!’), it is hard to tell whether they are actually imperative instances of PIC or rather indicative root declaratives used to express commands or requests: imperatives and second person indicative forms of most verbs are homophonous in Italian. I thank Valentina Bianchi for suggesting mangiare (“to eat”), which has distinct forms for second person singular indicative (mangi) and for singular imperative (mangia). The imperative form in fact does not admit PIC:

(v) a. Mangia sì!
    ‘Do eat!’
b. *Si che mangia!
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c. *Mi dispiace che no che non venga.
   to-me displeases that no that not come3SG.SUBJ
   ‘I am sorry that he is NOT coming’.
d. *Mi dispiace che non venga no.
   to-me displeases that not come3SG.SUBJ no
   ‘I am sorry that he is NOT coming’.
e. *Il tizio che non viene no non ci mancherà.
   the guy that not comes no not to-us miss3SG.FUT
   ‘We won’t miss the guy who’s NOT coming’.
f. *Il tizio che no che non viene non ci mancherà.
   the guy that no that not comes not to-us miss3SG.FUT
   ‘We won’t miss the guy who’s NOT coming’.

In (73) one can see that PCs cannot be embedded under conditionals, factive verbs and restrictive relatives.
As for adverbial clauses, PFC seems to distinguish between central and peripheral adverbial clauses (in the sense of Haegeman 2006 and later works by the same author), but PIC clearly does not:

(74) Mario non è venuto?
   ‘Did Mario not come?’
   a. *Poiché no che Mario non è venuto, faremo a meno di lui.
      because no that Mario not is come do1PL.FUT at less of him
   b. *Poiché Mario non è venuto no, faremo a meno di lui.
      because Mario not is come no do1PL.FUT at less of him

(75) Mario non è venuto?
   ‘Did Mario not come?’
   a. *Faremo a meno di lui, perché no che non è venuto.
      do1PL.FUT at less of him because no that not is come
   b. %Faremo a meno di lui, perché non è venuto no.
      do1PL.FUT at less of him because not is come no

Let us turn to complements of dire (‘to tell’) and credere (‘to think’):

(76) a. *Credo che no che non venga.
   believe that no that not come
   b. Credo che non venga no.
   believe that not come no
   ‘I think he’s NOT coming’.
c. *Mi hanno detto che no che non viene.
   to-me have told that no that not comes
d. Mi hanno detto che non viene no.
   to-me have told that not comes no
   ‘I’ve been told that he’s NOT coming’.

A PFC clausal complement is acceptable, a PIC clausal complement is not. Notice that clausal complements of non-factive verbs are known to have left peripheral topic and focus
projections available (Haegeman 2006b), so an approach entirely based on the left peripheral position of the particle in PIC does not seem viable.\footnote{A reasonable hypothesis would be to invoke a ban on a che … che sequence in declaratives: but the relevant contrast can be reproduced even with this factored out. The verb credere licenses complementizer deletion in Italian (Giorgi and Pianesi 2004). So the following example is acceptable both with and without che:}

On the other hand, even though PFC sentences can be embedded under verbs of saying or verbs of attitude, their availability under verbs of thinking is restricted, as pointed out by Poletto (2008, 2010). She reports that only first person forms (singular or plural) of credere are compatible with a PFC complement, while second and third person forms are incompatible:

\begin{align}
(77)\quad & a. \quad \ast \text{Crede che non venga no.} \\
& \text{believes that not comeSUBJ no} \\
& b. \quad \ast \text{Credi che non venga no.} \\
& \text{believe2SG that not comeSUBJ no} \\
& c. \quad \text{Crediamo che non venga no.} \\
& \text{believe that not comeSUBJ no} \\
& \text{‘We think that he’s NOT coming’}
\end{align}

She argues that this constraint is due to the evidential nature of the construction at hand. I think the pattern is real and interesting, but could be reduced to other causes. A constraint seems to exist to the effect that an embedded PFC is felicitous if the embedded clause expresses the so-called Main Point of the Utterance (MPU, after Simons 2007). In Simons’ words, the main point of an Utterance $U$ of a sentence $S$ is the proposition $p$, communicated by $U$, which renders $U$ relevant. In the terms of Roberts (1998, 2012), one can say that the main point of an utterance is content that addresses the question under discussion. Verbs of attitudes, Simons shows, can be divided in those that always express the main point (factives), and those that do not necessarily do so (non-factives, also known as parenthetical verbs), and can take complements that express the main point instead. Consider the following examples:

\begin{align}
(i)\quad & \text{Credo (che) Gianni non venga.} \\
& \text{believe (that) Gianni not comesSUBJ} \\
& \text{‘I think he’s not coming.’} \\
& \text{This is true also in the presence of a left peripheral contrastive focus:} \\
(ii)\quad & \text{Credo (che) GIANNI non venga. (Mario viene).} \\
& \text{believe (that) Gianni not comeSUBJ Mario comes} \\
& \text{‘I think GIANNI is not coming. Mario is coming.’} \\
& \text{Crucially, though, the two PCs still contrast in this respect:} \\
(iii)\quad & a. \quad \ast \text{Credo (che) no che non venga.} \\
& \text{believe (that) no that not come} \\
& b. \quad \text{Credo (che) non venga no.} \\
& \text{believe (that) not comeSUBJ no} \\
& \text{‘I think he’s NOT coming.’}
\end{align}
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(78)  a.  Mario viene?
  Mario comes
  ‘Is Mario coming?’
 b.  Gianni dice che non viene no.
  Gianni says that not comes no
  ‘Gianni says that he is NOT coming’.
 c.  Credo che non venga no.
  think that not comes no
  ‘I think that he is NOT coming’.

(79)  a.  Credi che Mario venga?
  think that Mario comes
  ‘Do you think Mario is coming?’.
 b.  Credo che non venga no.

(80)  a.  Gianni dice che Mario viene?
  Gianni says that Mario comes
  ‘Is Gianni saying that Mario is coming?’.
 b.  Gianni dice che non viene no.

In Italian, asserting a sentence introduced by credo can be thought of a (polite, indirect) way to assert the complement of credo. The case of dire is less obvious. In typical cases, asserting a sentence with a verb of saying obviously does not assert its complement. Rather, it asserts that the subject of dire has said something along the lines of the embedded sentence. On the other hand, (80b) obviously does not express a speech report. In a way, it offers Mario is not coming as an answer to the last QUD, while at the same time making clear that Gianni is the source of the information.

This discourse-dynamic explanation also predicts that in contexts such that the complement of credere can plausibly be construed as the MPU, the embedded PFC should be fine. This seems to be borne out:

(81)  a.  Mario viene?
  ‘Is Mario coming?’
 b.  Gianni crede che non venga no.
  ‘Gianni thinks that he is NOT coming.’

The speaker of (81b) is not merely ascribing to Gianni the belief that Mario is coming. He is rather answering the question raised by (81a), by suggesting that Mario is not coming, and at the same time it is indicating Gianni as the source of the information. In this context an embedded PFC becomes fine. So non-first person forms of credere align with first person forms and with dire, even though a suitable context might be less readily available.

I am not able to address properly the important issue of whence the MPU constraint comes. Whatever the explanation and syntactic implementation might be, it is worth pointing out that the property of being MPU has also been correlated to the availability of embedded V2 in the Scandinavian languages (Wiklund et al. 2009). Similar notions have been invoked to explain that-omission in English, inversion in embedded interrogatives in Irish English (Dayal and Grimshaw 2009), and the availability of Aboutness Topics in English and Italian (Bianchi and Frascarelli 2010). PFC, then, seems to be one further
example and, interestingly, it does not differ in this respect from bare responding particles *si* and *no* (see Sailor 2012 and Servidio 2014 for discussion).

The MPU constraint, however is to be explained, also seems to correlate with the Main Clause Phenomenon (MCP) nature of PFC: antecedents of conditionals, factive complements and relative clauses, known to disallow so called Main Clause Phenomena, are not able to express the MPU. The recent syntactic treatment of MCP proposed by Haegeman invokes a syntactic intervention effect to account for the unavailability of MCP in some clause types. I will not flesh out an account of the MCP behaviour of PFC: suffice it to say that a Haegeman approach would be feasible, provided that one is willing to postulate a left peripheral operator which would interact with other operator movements to the left periphery. Here, it is only worth pointing out that PFC is a well-behaved MCP, and should be analyzed as such.

On the other hand, it seems fair to state that PIC is strictly unembeddable, i.e., that it is unavailable in all syntactically embedded environments. This is unusual even for well-known MCPs. Poletto and Zanuttini (2013) propose a syntactic explanation that exploits the unembeddability of Hanging Topics (Benincà et al. 1988). PIC should be regarded as including a phonetically null Hanging Topic constituent, whose content is a copy of the “triggering utterance”, i.e., the linguistic antecedent:

(82)

\[
\begin{align*}
\text{a. } & \text{Marco è arrivato?} \\
\text{b. } & \text{[HTP [non è arrivato] [F(o)rcP1 ... [PolP1 no] [TP [F(o)rcP2 OP, che [TopP [F(oc)P [PolP2 e, non è arrivato]]]])]]}
\end{align*}
\]

The presence of this HT, the authors write, would explain three properties of PIC, unembeddability being one. Another is the following: PIC sentences cannot contain material that was not present in the utterance to which they are responding. The reason is that the null HT is a copy of the antecedent, and presumably (the authors are not explicit on this point) it also constrains the content of the complement of the particle to be identical in meaning to the antecedent. A relevant contrast is the following:

(83)

\[
\begin{align*}
\text{a. } & \text{Martina è venuta alla festa?} \\
\text{‘Did Martina come to the party?’}
\end{align*}
\]

---

48 Notice that the property of expressing the MPU does not coincide with the property of being asserted. Non-restrictive relatives, not exemplified above, according to Potts 2005, are in fact asserted, but they express secondary, not-at-issue assertions (hence, cannot express the MPU). PFC, as expected, is unavailable in such clauses.

49 If an operator (null, in some cases) is moved to the specifier of ForceP (Rizzi 1997) or another high functional projection in the left periphery, the presence of (some kinds of) left peripheral material would result in an intervention effect. Arguments for a movement derivation of central adverbial clauses, conditionals, and factive complements are presented in Haegeman (2010a,b) and Haegeman and Ürögdi (2011), respectively.

50 Notice, e.g., that the root phenomena investigated by Miyagawa (2012), that unlike mere MCP are assumed to involve Speech Act projections, are claimed to be available in complements of verbs of saying. Italian PIC, on the other hand, is unavailable in such contexts.

51 Actually, judging from their examples, a range of mismatches are allowed: besides the obvious indexical changes, the polarity can also be reversed.
The pattern is very clear and solid, but I think it could be derived by the congruence condition on polarity focus plus the availability of ellipsis in simple answers (Cf. Poletto 2008, 2010b; Holmberg 2013; Servidio 2014). Simple answers with further material with respect to the linguistic antecedent should be thought of as composite structures made out of an elliptical sentence (congruent to the antecedent), followed by independent material that provide further information. Thus, the structure of (83b) should be taken to be as follows:

\[
\text{[FocP sì [Foc [TP è venuta]]] [XP insieme a Lucia [X [TP è venuta]]]}
\]

But in this respect, PCs are not any different. The following, where the PP belongs in an independent sentence, is in fact acceptable:

\[
\text{[FocP sì [ che [TP è venuta]]] [XP insieme a Lucia [X [TP è venuta]]]}
\]

In this perspective, (83) is a consequence of the fact that the TP structure introduced by sì can be deleted under the relevant identity condition, the further material insieme a Lucia belonging in an independent sentence. The structure in (84b), on the other hand, is unacceptable because the PIC sì che è venuta (alla festa) insieme a Lucia is not congruent to the QUD. Information about Lucia can only be added by one further move of the ‘elaboration’ kind, separated from the direct answer.

The last property to be explained by a null HT is the restricted co-occurrence of PIC with Hanging Topics, which is expected by the well-known fact that HTs are unique (Benincà et al. 1988). The generalization, though, is less neat than one would hope for. The authors elicit HTs by using the quanto a DP (‘as for DP’) phrase. Their examples are the following:

\[
\text{a. Ti piacciono i fiori?}
\]

you like the flowers

‘Do you like flowers?’

\[
\text{b. *(Quanto ai) fiori, si che mi piacciono le camelie.}
\]

(as to-the) flowers yes that me please the camelias

‘As for flowers, I sure like camelias.’

\[
\text{a. Bevi il caffè?}
\]

\[52\] For the sake of the argument, I am sketching an analysis of the extra fragment that assumes, with Merchant (2004), that only constituents can be deleted: so, the PP insieme a Lucia must be assumed to be moved out of the deleted TP. I am not concerned with the details.
drink the coffee
‘Do you drink coffee?’
b. ?? Quanto al caffè, sì che lo bevo!
as to-the coffee yes that it drink
‘As for coffee, of course I drink it.’

(87) exemplifies a kind of HT construction in which the HT does not corefer with an argument in the sentence, but rather is in a looser semantic connection (here, hyperonymy) with it. Such examples, the authors argue, could be out just in virtue of the constraint they argue for that no material absent from the linguistic antecedent should be introduced in a PIC sentence. The bad status of (88), which exemplifies a case in which a HT is coreferent with a direct object, cannot be accounted for in the same way: this is evidence for a null HT, and given the uniqueness constraint on HTs, no explicit HT is expected to be acceptable. The picture, though, is made complicated by the wider class of HT constructions. While quanto a DP indeed seems to be marginal in PIC, consider the following:

(89) Hai fatto un regalo a Gianni?
‘Did you buy a present for Gianni?’
a. Gianni, no che non gli ho fatto un regalo.
‘Gianni, I did NOT buy a present for him.’
b. ?? Gianni, no che non ho fatto un regalo a lui.
c. Gianni, a lui no che non ho fatto un regalo.

(89a) must be regarded as a case of HT, since the dislocated indirect object is preposition-less (Benincà et al. 1988; Benincà and Poletto 2004). The result sounds quite acceptable. Pretty marginal in comparison is the counterpart with the strong pronoun in (89b): this, I suggest, might also result from the fact that (non-dislocated) strong pronouns, as opposed to clitics, are used when focused, as in:

(90) Chi hai visto ieri, (Marta o Giovanni)?
‘Who did you meet yesterday, (Marta or Giovanni)?’
a. Ho visto lui.
‘I met him.’
b. #L’ho visto.

Under my claim that PIC is, in spite of further complications, a focal construction, it is expected that the uniqueness constraint on focus should make sentence like (89b) unacceptable. So, while the distribution of HTs indeed turns out to be restricted in PIC, it does not seem to be the case that all kinds of HTs are excluded in PIC.

In support of their thesis, the authors also claim that the null HT can, optionally, be pronounced, giving (91):

(91) [HT Non è arrivato], no che non è arrivato.
Not all speakers accept (91), but that some do can be taken to be evidence for their approach. This, though, would set the null HT apart from run-of-the-mill Italian HTs: it does not seem the case, in general, that a HT can be resumed by a literal copy (as opposed to, e.g., a demonstrative or an epithet):

(92) a. ??Mario, non ho mai fatto un regalo a Mario.  
Mario not have ever done a present to Mario  
b. Mario, non ho mai fatto un regalo a quella carogna.  
Mario not have ever done a present to that scoundrel  
c. Mario, non ho mai fatto un regalo a quello li.  
Mario not have ever done a present to that one

This, of course, is not a fatal difficulty. One can assume that the relevant HT is a null, unstructured element, which is anaphoric for its content on its antecedent. That a covert HT could be responsible for the strict unembeddability of PIC is, then, a viable hypothesis. I would like to sketch an alternative that builds on one further property that distinguish PIC from PFC. Unlike PFC, PIC has surface identical counterparts with properties that resemble exclamatives. Consider the following:

(93) Si che mi piace quel libro.  
yes that to-me pleases this book  
‘I really like this book.’

As we know, PIC is not felicitous out-of-the-blue. The reason, I surmise, is that a polar question must be under discussion for the narrow focus on polarity to be congruent and relevant. The following, minimally different sentence can on the other hand be uttered out-of-the-blue:

___

53 Belletti (p.c.) points out the acceptability of a slightly, but significantly different sequence:

(i) Non è arrivato no, che non è arrivato.  
The difference, as hinted by the position of the commas, is in the pitch accent on no and the prosodic phrasing.

54 Interestingly, infinitive fronting (Benincà et al. 1988) seems to display most of the properties of the null HT but, crucially, it can be embedded:

(i) Venire, è venuto. (Ma è andato via subito).  
to-come is come but is gone away immediately  
‘As for coming, he came. (But he left immediately.)’

(ii) Venire, si che è venuto. (Ma è andato via subito).  
to-come yes that is come but is gone away immediately

(iii) Mi hanno detto che venire, è venuto. (Ma è andato via subito).  
to-me have told that to-come is come but is gone away immediately  
‘I’ve been told that as for coming, he came. (But he left immediately.)’

(iv) *Mi hanno detto che venire, si che è venuto. (Ma è andato via subito).  
to-me have told that to-come yes that is come but is gone away immediately

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(94) Quel libro si che mi piace!
    that book yes that to-me pleases
    ‘That book, I like it (a lot)’.

For convenience, I will dub this construction PIC$_{Ex}$. This construction can, and typically does, receive a scalar interpretation that various theories agree on attributing to exclamatives (Zanuttini and Portner 2003; Rett 2011). (94) can be paraphrased as expressing$^{55}$ that the speaker likes the book to an unusual degree, or to the extreme degree on a relevant scale. Mere PIC lacks this component, as it is made clear by the continuations in (95):

(95) a. Sì che mi piace quel libro, ma preferisco il film.
    yes that to-me pleases that book but prefer the film
    ‘I do like that book, but I prefer the film.’

b. ??Quel libro si che mi piace! Ma preferisco il film.
    that book yes that to-me pleases but prefer the film

In Rett (2011)’s taxonomy, (94) most closely resembles sentential exclamation with gradable foci. This construction is not, strictly speaking, exclamative, but it differs from the stock case of sentence exclamations (which have the syntax of unmarked declarative but an exclamative interpretation) in sharing the degree interpretation which is peculiar of exclamatives proper.

Rett’s view of the semantics of exclamatives is that it is made out of two different components: one is a measure operator, which I assume to be present in PIC$_{Ex}$ and contributes the covert degree variable, and the other one is an illocutionary operator. The latter, Rett proposes, is shared by sentence exclamations, which have the syntax of unmarked declarative but an exclamative interpretation. PIC and PIC$_{Ex}$ I propose, could differ from one another much as Rett’s sentence exclamations differ from exclamatives. The illocutionary component, I surmise, would be responsible for the unembeddability, and would be shared by PIC and PIC$_{Ex}$. In addition, PIC$_{Ex}$ has an operator that applies to a gradable property that must be provided by the verb phrase. (Things being so, I assume, PIC$_{Ex}$ should not even count as polarity focal.)$^{56}$

One caveat, though, is in order. Unexpectedness/surprise (which for Rett is involved in the illocutionary exclamative operator) does not seem to be a necessary feature of PIC$_{Ex}$ let

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55 Not necessarily asserting; see Rett (2011) for arguments that exclamatives involve the expressive dimension in a two-dimensional semantics.

56 It might seem that the degree interpretation is not a necessary feature of PIC$_{Ex}$ because seemingly non-gradable predicates are often acceptable:

(i) Il dottor Rossi si che è un medico!
    the dictor Rossi yes that is a doctor
    ‘Dr. Rossi, he is a real doctor!’

This objection, though, must be taken with a grain of salt: in the relevant contexts the relational predicate are in fact coerced into a gradable reading: Rossi (as opposed to a fellow doctor) exemplifies a high degree the qualities a good doctor should have (he is knowledgeable, mild-mannered etc.).
alone PIC. Rett (2008) acknowledges that for an exclamative to be felicitous the speaker must not necessarily be surprised herself at the content of the exclamative, but only find it ‘surprising in some capacity’. In this weaker sense it seems that while PIC\textsubscript{Ex} can express some feeling of noteworthiness, PIC typically does not.\textsuperscript{57} For this reason, Rett’s analysis of sentence exclamations and exclamatives cannot be extended to PIC as it is. If my suggestion of an illocutive component in PIC is to be maintained, then, the interpretive contribution of the illocutive operator must lie somewhere else.\textsuperscript{58}

7. Summary

This article has, first and foremost, tried to reaffirm a point which looks, in retrospective, somewhat conservative: PCs, which Poletto (2008) argued to be focal constructions, are in fact focal constructions. More specifically, they are constructions for polarity focus, which in a way make them similar to other grammatical means for the expression of so called Verum Focus (see Breitbart et al. 2013 for crosslinguistic generalizations). On the other hand, I have tried to argue, this do not exhaust their nature. PFC might, with some caution, taken to be nothing more than a polarity focal construction (and to a large extent, interchangeable with mere responding particles sì and no), but this clearly does not hold of PIC. The latter construction seems to involve an illocutionary force that bears a certain similarity to exclamatives. Regardless of whether my proposals are on the right track or not, much is still to be done.

References


\textsuperscript{57} Rather, in Poletto (2008)’s description, PIC even expresses the feeling that the content should be obvious (i.e., the opposite of noteworthy). Poletto, on the other hand, claims that a surprise component is present in the meaning of PCs, namely, surprise at the attitudes of the interlocutor.

\textsuperscript{58} One candidate would be the use-conditional Verum operator introduced by Gutzmann and Castroviejo-Miró (2011), which in a multidimensional semantics introduce a request for downdating the current QUD. I leave the investigation of the feasibility of such analysis to further research.
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Polarity focus constructions in Italian


