The left periphery fragmented: evidence from Italian *

Roberto Petrosino

University of Connecticut

1.   Introduction

The cartographic approach assumes that each of the usual syntactic phrases has a far more complex internal structure than previously thought. As for the CP domain for example, the seminal work by Rizzi (1997) has argued that it consists of the following fixed sequence of heads, jointly referred to as the *left periphery* (1).[1]

(1)   [$_{ForceP}$ FORCE [$_{TopP*}$ TOP [$_{IntP}$ INT [$_{FocP}$ FOC [$_{TopP*}$ TOP [... [$_{FinP}$ FIN IP]]]]]]]

Each of the heads in (1) are assumed to be associated to a specific property. FORCE indicates the clause type, and FIN indicates clause finiteness. TOP and FOC are the heads responsible for topicalization and focalization, respectively; notice that TOPP may be recursively merged (as indicated by *), whereas FOCP may not. Finally, *se* 'if', *perché* 'why' reside within INTP (Rizzi 2001).

It is usually assumed that the full cartographic structure is always fully projected. This means that all functional heads in (1) are always present in the syntax.[2] This paper tests this assumption with respect to the conditions on cross-clausal A-binding in Italian; three cases will be explored in this respect.

First, sentences with embedded D-linked *wh*-phrases are judged differently just by minimally flipping the linear order between the bindee-containing phrase and the topicalized phrase:

---

[1]For the sake of clarity, this paper will not be dealing with other heads that have been recently posited in the domain (for a review, see Rizzi & Bocci forthcoming), as their presence in the structure is not relevant for the current purposes.

[2]Though see (Rizzi 1997, 314-315) for a weaker position.

(2) a. *Gianni$_i$ si   chiede, Maria, [quale ritratto di [se   stesso]$_i$],   ha
        Gianni REFL ask.3SG Maria [which picture of REFL same.MASC] AUX.3SG
        comprato.
        buy.PPT.MSG
        'Gianni wonders, Mary, [which picture of himself], she bought.'

    b. ??Gianni$_i$ si   chiede [quale ritratto di [se   stesso]$_i$]   Maria ha
        Gianni REFL ask.3SG [which picture of REFL same.MASC] Maria AUX
        comprato.
        buy.PPT.MSG
        'Gianni wonders which picture of himself Mary bought.'

While (2a) is unacceptable, putting the topic phrase *[Maria]* before the anaphor-containing *wh*-phrase *[quale ritratto di se stesso]* as in (2b), leads to significant improvement.[3] In the examples above, it is important to note what is responsible for the asymmetry is the anaphor *se stesso*, since the asymmetry disappears as soon as the anaphor is replaced with the R-expression *Luigi*.

(3) a. Gianni si   chiede [quale ritratto di Luigi] Maria ha   comprato.
        Gianni REFL ask.3SG [which picture of Luigi] Maria AUX.3SG buy.PPT.MSG
        'Gianni wonders [which picture of Luigi] Mary bought.

    b. Gianni si   chiede, Maria, [quale ritratto di Luigi], ha
        Gianni REFL ask.3SG Maria [which picture of Luigi] AUX.3SG
        comprato.
        buy.PPT.MSG
        'Gianni wonders, Mary, [which picture of Luigi] she bought.'

Second, sentences interposing an anaphor-containing topic between the matrix clause and an embedded argumental *wh*-item show a similar effect.

(4) a. *Gianni$_i$ si   chiede, chi, [il ritratto di [se   stesso]$_i$]$_j$,   lo$_j$ ha
        Gianni REFL ask.3SG, who, [the picture of REFL same.MASC], CL AUX.3SG
        comprato.
        buy.PPT.MSG.
        Intended: 'John wonders, the picture of himself, who bought.'

    b. Gianni$_i$ si   chiede, [il ritratto di [se   stesso]$_i$]$_j$,   chi lo$_j$ ha
        Gianni REFL ask.3SG, [the picture of REFL same.MASC], who CL AUX.3SG
        comprato.
        buy.PPT.MSG.
        'John wonders, the picture of himself, who bought.'

---

[3]As shown in (Rizzi 1997), focalization is structurally incompatible with *wh*-phrases, regardless of the presence of the anaphor.

Again, it's the anaphor that causes the effect.

(5) a. Gianni$_i$ si   chiede, chi, [il ritratto di Luigi]$_j$, lo$_j$ ha
         Gianni REFL ask.3SG, who, [the picture of Luigi], CL AUX.3SG
         comprato.
         buy.PPT.MSG.
         'John wonders, who, the picture of Luigi, bought.'

     b. Gianni$_i$ si   chiede, [il ritratto di Luigi]$_j$, chi lo$_j$ ha
         Gianni REFL ask.3SG, [the picture of Luigi], who CL AUX.3SG
         comprato.
         buy.PPT.MSG.
         'John wonders, the picture of Luigi, who bought.'

Finally, in embedded yes/no questions cross-clausal binding is impossible when the anaphor-containing phrase *[il ritratto di se stesso]* is positioned in the lower portion of the embedded clause.

(6) *Gianni$_i$ si   chiede se   Maria ha   comprato   [il ritratto di [se
      Gianni REFL ask.3SG whether Maria AUX.3SG buy.PPT.MSG [the picture of REFL
      stesso]$_i$].
      same.MASC].
      Intended: 'John$_i$ wonders whether Mary bought the picture of himself$_i$.'

On the other hand, if the anaphor-containing phrase is higher up in the left periphery of the embedded clause, its position with respect to the complementizer *se* leads to asymmetrical judgments.

(7) a. ??Gianni$_i$ si   chiede se,   [il ritratto di [se   stesso]$_i$]$_j$,   Maria lo$_j$
         Gianni REFL ask.3SG whether, [the picture of REFL same.MASC], Mary CL
         ha   comprato.
         AUX.3SG buy.PPT.MSG.
         'John wonders if, the picture of himself, Mary bought.'

     b. Gianni$_i$ si   chiede, [il ritratto di [se   stesso]$_i$]$_j$,   se   Maria lo$_j$
         Gianni REFL ask.3SG, [the picture of REFL same.MASC], whether Mary CL
         ha   comprato.
         AUX.3SG buy.PPT.MSG.
         'John wonders, the picture of himself, if Mary bought.'

When *[il ritratto di se stesso]* follows *se* (7a), the sentence is degraded, especially when compared to (7b), where *[il ritratto di se stesso]* precedes *se*.
   Once again, it's the anaphor that is responsible for the spectrum of judgements in (7):

(8)   a.   Gianni si   chiede   se   Maria ha   comprato   [il   ritratto di
              Gianni REFL ask.3SG whether Maria AUX buy.PPT.MSG [the picture of
              Luigi].
              Luigi].

      b.   Gianni si   chiede   se,   [il   ritratto di Luigi]$_j$, Maria lo$_j$ ha
              Gianni REFL ask.3SG whether, [the picture of Luigi],   Maria CL AUX
              comprato.
              buy.PPT.MSG.

      c.   Gianni si   chiede, [il   ritratto di Luigi]$_j$, se   Maria lo$_i$ ha
              Gianni REFL ask.3SG, [the picture of Luigi],   whether Maria CL AUX
              comprato.
              buy.PPT.MSG.

      d.   Gianni si   chiede   se,   [IL RITRATTO DI LUIGI], Maria ha
              Gianni REFL ask.3SG whether, [IL RITRATTO DI LUIGI], Maria AUX
              comprato   (non quello di Marco).
              buy.PPT.MSG (not   that   of Marco)

The data above show that cross-clausal A-binding is possible in Italian, but only if the anaphor resides within the clause initial constituent, regardless of the position of that constituent within the CP domain. This paper argues that these facts suggest that the full cartographic structure of CP is *not* always fully projected in the syntax; rather, it may look *fragmented*, namely lacking specific heads that are not necessary for the concurring syntactic purposes.

     The remainder of the paper unfolds as follows. In section 2, I summarize the recent insights on cross-phasal conditions on movement and binding in other languages such as Serbo-Croatian and Bulgarian. In section 3, I go back to the Italian data just discussed and propose a phase-driven analysis for it, which ultimately suggests that the CP cartography may be fragmented (i.e., not fully projected). Section 4 concludes the paper.

2.   Binding across phases

Under the assumption that phases determine locality domains, I adopt the approach to phases whereby the highest clausal projection is a phase (Bošković 2014, 2015; Wurmbrand 2014). In line with many others (among which Despic 2011, Hicks 2009, Carlos Quicoli 2008), I assume that A-binding is possible across phases under the condition below:

(9)   *Cross-phasal A-binding*
       An anaphor can be bound outside of its minimal phase only if it is located at the edge of the phase.

Cases with multiple edges of the same phase most clearly support (9), under the assumption from Bošković (2016a) that only the outmost edge of a phase counts as the phasal edge

for the purpose of the PIC (*Phase Impenetrability Condition*; Chomsky 2001). In Serbo-Croatian, adjectives and possessors may co-occur in no particular order:

(10)   a.   omiljena Jovanova kola   (Serbo-Croatian)
              favorite Jovan's   car

         b.   Jovanova omiljena kola
              Jovan's favorite car

     Bošković (2016a) takes this to mean that the possessor and the adjective can be base-generated in either order at the edge of the NP phase.[4] Importantly, extraction of a complement of a modifying AP (11) is disallowed when the AP is preceded by a possessor (11b), but allowed when the AP is followed by a possessor (11c).

(11)   a.   [Na tebe]$_i$ sam   vidio   [$_{NP}$ [ponosnog t$_i$] [$_{NP}$ oca]].
              Of.P you aux.1SG see.PPT   proud   father.
              'I have seen a father proud of you.'

         b.   *[Na tebe]$_i$ sam   vidio   [$_{NP}$ Jovanovog [$_{NP}$ [ponosnog t$_i$] [$_{NP}$ oca]]].
              Of.P you aux.1SG see.PPT   John.GEN   proud   father.
              'I have seen John's father proud of you.'

         c.   [Na tebe]$_i$ sam   vidio   [$_{NP}$ ponosnog t$_i$ [$_{NP}$ Jovanovog] [$_{NP}$ oca]]].
              Of.P you aux.1SG see.PPT   proud   John.GEN father.
              'I have seen John's father proud of you.'

Likewise, an anaphor bound from outside an NP must be the initial constituent of the NP phase:

(12)   a.   Marija$_i$ je prodala [$_{NP}$ svoju$_i$ omiljenu knjigu].
              Marija is sold   [her   favorite book]
              'Marjia sold her favorite book.'

         b.   *Marija$_i$ je prodala [$_{NP}$ omiljenu svoju$_i$ knjigu].
              Marija is sold   [favorite her   book]
              'Marjia sold her favorite book.

All these cases involves multiple edges of the NP phase. Bošković (2016a) argues that these effects are due to the fact that, in cases like (11) and (12), where there are multiple edges of the same phase, only the highest edge can be licensed for movement and binding. In the examples above, the movement takes place from the outmost edge in (11c), but not in (11b), and the anaphor is the outmost edge in (12a), but not in (12b).

     Further corroborating evidence comes from Bulgarian Nissenbaum (see also 2000). In Bulgarian, multiple *wh*-fronting constructions (where all *wh*-phrases are located in separate

---

[4]Bošković (2016a) argues that DP is missing in Serbo-Croatian, a language without articles, and that NP functions as a phase (see Bošković 2012, 2014, for relevant evidence)

Specs of CP) are possible; however, an anaphor contained in a fronted *wh*-phrase can be bound to an antecedent in the higher clause only if it is in the highest [Spec, CP]:

(13)   a. *Maria$_i$ znae kǎde kolko/kakvi   [[svoi$_i$] snimki] bjaha kupeni.
            Maria knows where how.many/what.kind.of   her   picture were bought
            'Maria knows where how many/what kind of pictures of herself were bought.'

      b. ??Maria$_i$ znae kolko/kakvi   [[svoi$_i$] snimki] kǎde bjaha kupeni.
            Maria knows how.many/what.kind.of   her   picture where were bought
            'Maria knows where how many/what kind of pictures of herself were bought.'

Just putting the anaphor-containing *wh*-phrase *[znae kolko/kakvi svoi$_i$] snimki]* clause-initially in (12b) leads to a clear improvement in grammaticality.

    Taken together, the above data suggest that an anaphor can be bound outside of its phase only if it is located at its edge, in accordance with (9).

3.   Cross-clausal A-binding in Italian

The Italian data discussed in section 1 raise an issue for the cartographic approach in light of the conditions on A-binding discussed in section 2. We have seen that cross-clausal anaphor binding in Italian is possible only into the first clausal constituent, crucially irrespective of what that constituent is. This is compatible with the phase-driven version of A-binding (9), which has been independently corroborated by previous work on other languages. However, the effects seen in the Italian data have clear consequences for the cartography of the left periphery: in contrast to what was previously assumed, the full cartographic structure of CP may not be always present. If the full CP cartographic structure were always present, all cases where the anaphor is not in [Spec, ForceP] should be bad: being the highest clausal projection of the left periphery (1), ForceP should always be the edge of the CP phase, thus making anaphor binding across clauses possible only when the anaphor-containing phrase is located in [Spec, ForceP].

    Thus, the examples below would be expected to be ungrammatical, as the anaphor-containing DP is located in [Spec, FocP] in (14a) and in [Spec, TopP] in (14b, c), hence not at the phasal edge (indicated by $||_\Phi$) under the full cartographic structure (1).

(14)   a. Gianni$_i$ si   chiede $||_\Phi$ [FORCEP [FOCP quale ritratto di [se
           Gianni REFL ask.3SG   [[which picture of   REFL
           stesso]$_i$]   Maria ha   comprato].
           same.MASC] Maria AUX buy.PPT.MSG]
           'Gianni wonders which picture of himself Mary bought.'

      b. Gianni$_i$ si   chiede, $||_\Phi$ [FORCEP [TOPP il   ritratto di [se
           Gianni REFL ask.3SG,   [[the picture of   REFL
           stesso]$_i$]$_j$,   [FOCP chi] lo$_j$ ha   comprato].
           same.MASC],   [who] CL AUX.3SG buy.PPT.MSG].
   'John wonders, the picture of himself, who bought.'

c. Gianni$_i$ si chiede, $\|_\Phi$ [$_{\textbf{FORCEP}}$ [$_{\text{TOPP}}$ il ritratto di [se
   Gianni REFL ask.3SG, [[the picture of REFL
   stesso]$_i$]$_j$, [$_{\text{INTP}}$ se] Maria lo$_j$ ha comprato].
   same.MASC], [whether] Mary CL AUX.3SG buy.PPT.MSG].
   'John wonders, the picture of himself, if Mary bought.'

For example, the structure for (14b) would look like (15):

(15)
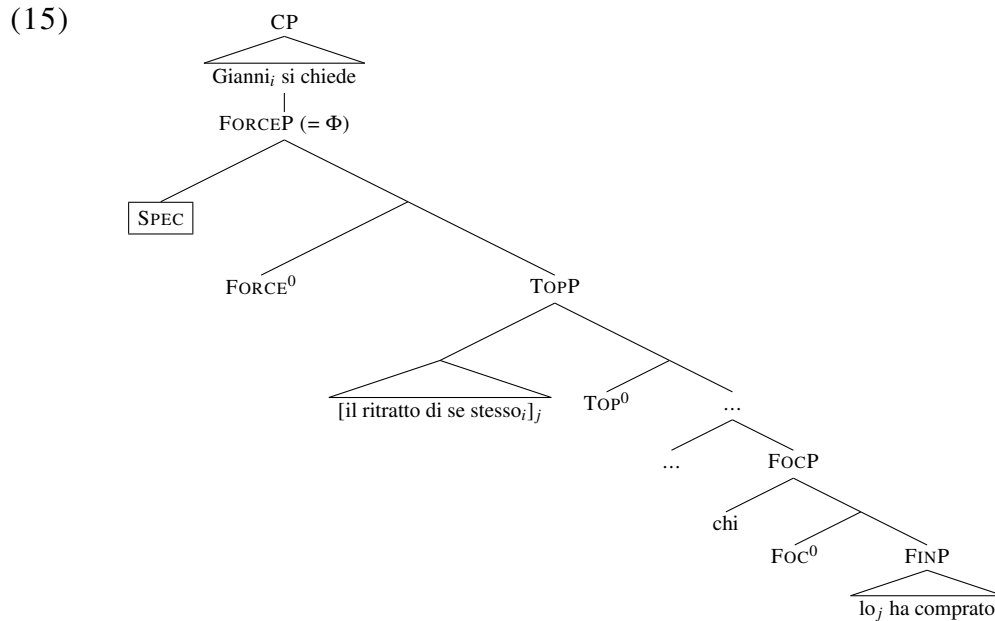
Under the assumptions discussed in sec. 2, only an anaphor contained in [Spec, ForceP] (i.e., the outmost edge of the CP phase; boxed in the structure above) would be able to be bound to an element in the matrix clause.

This prediction is not met, as the examples in (14) are all grammatical. This can instead be captured if we assume that the full left periphery may not be always projected, with the structure without clear manifestation not being present (for additional evidence to this effect, see Bošković 2016b, 41-42; Erlewine 2016). For example, (14b) then has the following structure:

(16)

Roberto Petrosino
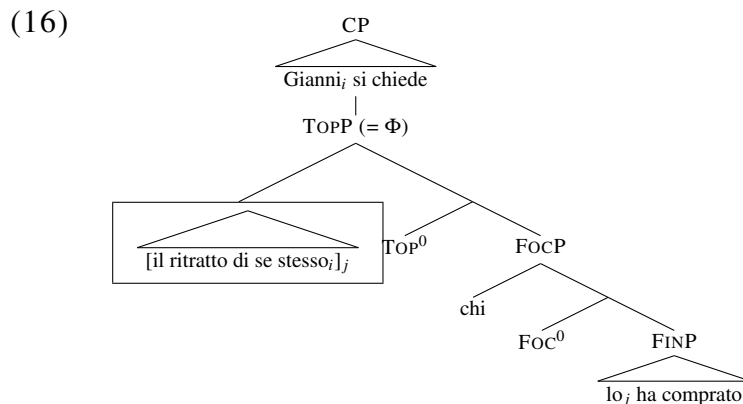
In the structure (16), the highest clausal projection is TopP, which is then a phase. This means that the topic-contained anaphor *se stesso* resides inside of the outmost phasal edge of the embedded clause (boxed in the tree above), so it can be bound to the matrix element *Gianni*. All the data discussed in section 1 can be in fact captured in this manner.

So far, so good. The analysis takes a minor twist when taking the following sentence into account:

(17)　Gianni$_i$ si　chiede, ieri,　　[il ritratto di [se　stesso]$_i$]$_j$,　chi lo$_j$
　　　Gianni　REFL ask.3SG, yesterday, [the picture of REFL same.MASC], who CL
　　　ha　　comprato.
　　　AUX.3SG buy.PPT.MSG.
　　　'John wonders, yesterday, the picture of himself, who bought.'

The account so far proposed appears to predict (17) to be bad, as the topicalized adjunct *[ieri]*, and not the anaphor-containing phrase *[il ritratto di se stesso]*, is at the outmost edge of the embedded clause:

(18)
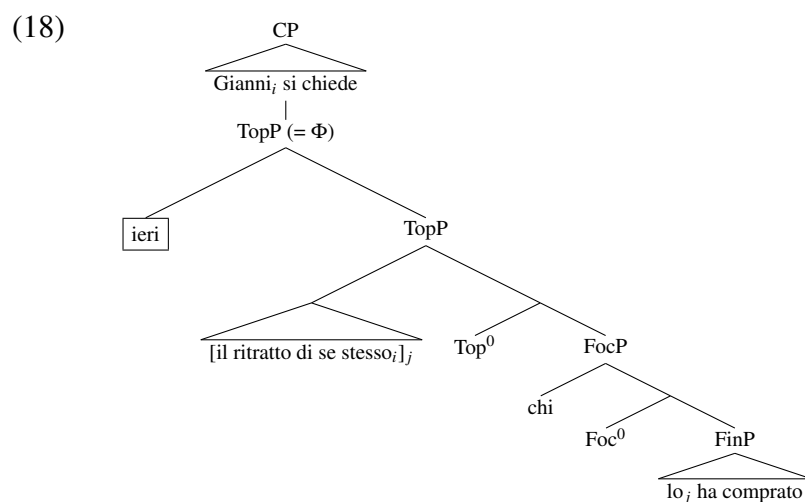
However, (17) is grammatical. I contend that something else is at play here. The phrase *[ieri]*, is an adjunct topic, hence can be assumed to be adjoined later in the derivation in the spirit of Lebeaux (1988), who argues that adjuncts can be inserted acyclically. Assume that adjuncts can be indeed inserted acyclically as well as a derivational approach to condition A (see among others, Belletti & Rizzi 1988, Stepanov 2001) where Condition A can be satisfied during the derivation. The adjunct in (17)-(18) above can then be inserted acyclically after Condition A is satisfied. Therefore the adjunct does not block cross-clausal binding here.

On the other hand, intervening argumental topics block A-binding across clauses:[5]

---

[5]For another case where adjunct and non-adjunct topics behave differently, see Bošković (2011) and Browning (1996).

(19) *Gianni$_i$ si   chiede, [a Maria]$_k$, [il ritratto di [se   stesso]$_i$]$_j$,   chi
      Gianni REFL ask.3SG, to Maria,   [the picture of REFL same.MASC], who
      gli$_k$-e-lo$_j$ ha   dato.[6]
      CL.DAT–CL.ACC AUX.3SG give.PPT.MSG.
      'John wonders, to Mary, [the picture of himself], who gave.'

In (19), the argumental topic *[a Maria]*, located in [Spec, TopP], resides in the outmost edge of the clausal phase TopP, hence it blocks binding into the lower topic.

4.   Conclusions

The purpose of this paper was two-fold. First, Italian provides additional evidence for the phasal approach to Condition A, whereby an anaphor may be bound cross-clausally only when it is located at the phasal edge of the clause. Secondly, the Italian data discussed in this paper also provide evidence that the left periphery may not be always fully projected, rather it may have a structure responsive to the contextual structural needs, in that only those functional projections that are independently motivated are actually present in the structure (see also Bošković 2016b, Erlewine 2016).

References

Belletti, Adriana, & Luigi Rizzi. 1988. Psych-verbs and θ-theory. *Natural Language & Linguistic Theory* 6:291–352.
Bošković, Željko. 2011. Rescue by PF deletion, traces as (non-)interveners, and the *that-trace* effect. *Linguistic Inquiry* 42:1–44.
Bošković, Željko. 2012. On nps and clauses. In *Discourse and grammar: From sentence types to lexical categories*, ed. G. Grewendorf & T. E. Zimmerman, 179–242. Berlin: Mouton de Gruyter.
Bošković, Željko. 2014. Now I'm a phase, now I'm not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45:27–89.

---

[6]Speakers vary in their judgements here. Importantly, for speakers who judge (19) to be good, the following sentences are also good:

(iii) Gianni$_i$ si   chiede chi ha   comprato   il ritratto di [se   stesso]$_i$.
       Gianni REFL ask.3SG who AUX.3SG buy.PPT.MSG the picture of REFL same.MASC
       'John wonders who bought the picture of himself.'

(iv) Gianni$_i$ si   chiede se   Maria ha   comprato   [il ritratto di [se   stesso]$_i$.]
      Gianni REFL ask.3SG whether Maria AUX.3SG buy.PPT.MSG the picture of REFL same.MASC
      'John wonders whether Mary bought the picture of himself'.

I assume that these speakers allow the logophoric use of *se stesso* in such contexts, although it has been showed that se stesso is *usually* not logophoric, as opposed to *proprio/a* 'his/her own' (Giorgi 2007, Pollard & Sag 1992).

Bošković, Željko. 2016a. Getting really edgy: On the edge of the edge. *Linguistic Inquiry* 47:1–33.

Bošković, Željko. 2016b. On the timing of labeling: Deducing Comp-trace effects, the Subject Condition, the Adjunct Condition, and tucking in from labeling. *The Linguistic Review* 33:17–66.

Browning, Marguerite A. 1996. CP recursion and *that-t* effects. *Linguistic Inquiry* 27:237–255.

Carlos Quicoli, A. 2008. Anaphora by phase. *Syntax* 11:299–329.

Chomsky, N. 2001. Derivation by phase. In *Ken Hale: A Life in Language*, ed. M. Kenstowicz, 1–52. Cambridge, MA: MIT Press.

Despic, Miloje. 2011. Syntax in the absence of determiner phrase. Doctoral dissertation, University of Connecticut, Storrs.

Erlewine, Michael Yoshitaka. 2016. Anti-locality and optimality in Kaqchikel Agent Focus. *Natural Language & Linguistic Theory* 34:429–479.

Giorgi, Alessandra. 2007. On the nature of long-distance anaphors. *Linguistic Inquiry* 38:321–342.

Hicks, Glyn. 2009. *The derivation of anaphoric relations*, volume 139. John Benjamins Publishing.

Lebeaux, David. 1988. Language acquisition and the form of the grammar. Doctoral dissertation, University of Massachussets, Amherst.

Nissenbaum, Jon. 2000. Investigations of covert phrase movement. Doctoral dissertation, MIT, Cambridge, MA.

Pollard, Carl, & Ivan A. Sag. 1992. Anaphors in English and the scope of binding theory. *Linguistic inquiry* 23:261–303.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar*, 281–337. Springer.

Rizzi, Luigi. 2001. On the position "Int(errogative)" in the left periphery of the clause. *Current studies in Italian syntax: Essays offered to Lorenzo Renzi* 287–296.

Rizzi, Luigi, & Giuliano Bocci. forthcoming. The left periphery of the clause. In *Blackwell companion to syntax*. Blackwell Publishers.

Stepanov, Arthur. 2001. Late adjunction and minimalist phrase structure. *Syntax* 4:94–125.

Wurmbrand, Susanne. 2014. Tense and aspect in English infinitives. *Linguistic Inquiry* 45:403–447.

Roberto Petrosino
roberto.petrosino@uconn.edu