# Lethal Ambiguity

Martha McGinnis

This article argues for a new analysis of Rizzi's (1986) Chain Condition effects, which accounts for the absence of such effects in some derivations. Under the proposed analysis, each moved phrase must be unambiguously linked with its copy at LF. Otherwise, a lethal ambiguity arises, and the derivation crashes. The syntactic position (address) and the numeration index of an A-moved phrase are used to link it with its copy. Long A-movement across another DP can arise in two ways: via an EPP-driven derivation that gives rise to a lethal ambiguity, and via a Case-driven derivation that does not.

Keywords: Chain Condition, A-movement, binding, crossover, reflexive clitics, scrambling

In the years since Rizzi's (1986) landmark analysis of the interpretation of syntactic dependencies, considerable supporting evidence for this analysis has arisen, as well as a number of empirical challenges. In this article, I propose an account that captures the empirical insights of Rizzi's analysis, but accommodates a wider range of facts.

The central proposal is that a moved phrase must be unambiguously linked with its copy at LF. A *lethal ambiguity* arises in a syntactic configuration like (1), where a phrase YP undergoes A-movement into a specifier of a head X, which already has a specifier ZP. If YP and ZP are coindexed, YP cannot be unambiguously linked with its copy. The structure in (1) is an uninterpretable syntactic object, which crashes at LF.
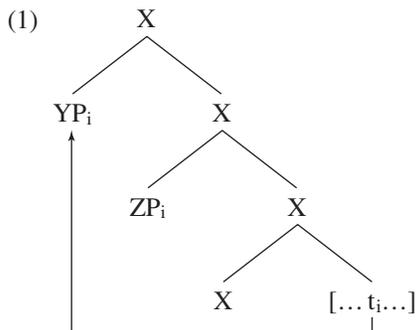
Abbreviations are as follows. 3: third person; ACC: accusative; AOR: aorist; APPL: applicative; CL: clitic; COMP: complementizer; DAT: dative; ERG: ergative; EXCL: exclamative particle; FEM: feminine; FOC: focus; FUT: future; FV: final vowel; GEN: genitive; IMP: impersonal; NACT: nonactive; NEG: negative; NOM: nominative; OP: object pronoun; PASS: passive; PL: plural; PRES: present; PV: aspectual preverb; SG: singular; SP: subject pronoun.

The proposed analysis draws on Chomsky's (2000, 2001) phase theory of syntax. According to this theory, a syntactic derivation is computed in small chunks or *phases,* which are sent off to the semantic and phonological interfaces (LF and PF) before the derivation continues. One aspect of phase theory that will be important for the proposed analysis is that the edge of a phase can act as an ''escape hatch'' for a lower argument, such as YP in (1). This escape hatch may or may not be a Case-checking position. Phase theory contrasts with theories in which a complete syntactic structure is interpreted. For example, Rizzi (1986) argues that syntactic dependencies are generated by a process of chain formation, which links sets of coindexed syntactic positions into chains in which each member c-commands each subsequent member. Each chain is then evaluated for compliance with the Chain Condition, which requires each chain to have exactly one θ-position and one argument (Case) position.

The article is organized as follows. In section 1, I present Rizzi's (1986) chain formation analysis and show that it has both empirical support and some empirical problems. In section 2, I propose that the apparent conflict arises from the availability of two different derivations for ''long'' A-movement (A-movement of one DP over a c-commanding DP). In section 3, I argue that one of these derivations can give rise to lethal ambiguity, while the other does not. In section 4, I extend the proposal to cover Ā-movement, object shift, and clitic movement in transitive clauses.

1 The Chain Condition

According to Rizzi (1986), a syntactic chain is formed by linking a sequence of coindexed positions, each of which c-commands the next, with no intermediate elements omitted. Rizzi argues that chains are subject to what is often referred to as the Chain Condition, which requires each chain to contain exactly one θ-position and one argument (Case) position. As a result, if a coindexed phrase intervenes in the sequence of c-command between the Case position and the θ-position of an argument, as in (2), an ill-formed chain results. Any chain containing both XP_i and YP_i has two Case positions, while a chain containing only XP_i has no θ-position.

(2) *XP_i . . . [YP_i . . . e_i . . .]
      | |
      Case   θ

Rizzi's chain formation algorithm is strictly representational, so the gap in (2) is represented as a base-generated empty category, rather than as a trace or a copy of movement.

Rizzi argues that the Chain Condition rules out reflexive clitics in passive, unaccusative, and raising clauses. In the remainder of this section, I briefly review his central empirical evidence for the chain formation analysis and present counterevidence from several languages. I also show that an alternative analysis suggested by Pesetsky (1995) encounters empirical difficulties.

1.1 Evidence for the Chain Formation Analysis

Rizzi's argument for the chain formation analysis arises from a restriction on reflexive clitics. As noted previously by Kayne (1975) and Burzio (1981, 1986), reflexive clitics cannot appear

in passive, unaccusative, and raising clauses. For example, (3) shows the passive of a double object construction in Italian. The logical object *Gianni* occupies the subject position, while the indirect object is a dative clitic. A pronominal dative clitic is fine (3a), but a reflexive one is ungrammatical (3b). (For clarity, some empty categories have been added to Rizzi's examples, in keeping with his analysis.)

(3) a. Gianni$_i$ gli$_j$ è   stato affidato e$_j$ e$_i$.
         Gianni him.DAT was been entrusted
         'Gianni$_i$ was entrusted to him$_j$.'
         (Rizzi 1986:70)
     b. *Gianni$_i$ si$_i$ è   stato affidato e$_i$ e$_i$.
         Gianni self was been entrusted
         'Gianni$_i$ was entrusted to himself$_i$.'
         (Rizzi 1986:70)

Under the chain formation approach, the contrast in (3) follows from the Chain Condition. In (3a), two chains are formed: (*Gianni*$_i$, e_i) and (*gli*$_j$, e_j). Each has a Case position and a θ-position. In (3b), however, no well-formed set of chains can be generated. If any element is treated as a one-membered chain, it will lack either a θ-position or a Case position. The two remaining possibilities are shown in (4). The single chain in (4a) has two Case positions and two θ-positions. In (4b), the first chain has two Case positions, while the second has two θ-positions. Either way, the Chain Condition is violated.

(4) a. (Gianni$_i$, si$_i$, e$_i$, e$_i$)
     b. (Gianni$_i$, si$_i$) (e$_i$, e$_i$)

The problem with (3b) is not semantic, since a full (nonclitic) reflexive can be used instead, as in (5a). Here Rizzi's algorithm generates a well-formed set of chains, as shown in (5b). *Gianni* is in a Case position, while the empty category is in a θ-position. The reflexive forms a one-membered chain, with both Case and a θ-role.

(5) a. Gianni$_i$ è   stato affidato e$_i$ a se stesso$_i$.
         Gianni was been entrusted   to self
         'Gianni$_i$ was entrusted to himself$_i$.'
         (Rizzi 1986:70)
     b. (Gianni$_i$, e$_i$) (se stesso$_i$)

Rizzi's analysis also makes the correct predictions for the examples in (6). (6a) shows an unaccusative clause with two internal arguments, one a dative pronominal clitic and the other a DP occupying the subject position. If the clitic is reflexive or reciprocal, as in (6b), the derivation is ungrammatical. Under Rizzi's analysis, all possible sets of chains again violate the Chain Condition. In (6c), the dative argument is a full reciprocal rather than a clitic. This case is grammatical, like (5).

(6) a. [Il ladro e   il poliziotto]$_i$ gli$_j$ sono caduti e$_i$ addosso e$_j$.
          the thief and the cop   him.DAT are fallen   on.top
          'The thief and the policeman fell on top of him.'
          (Michela Ippolito, personal communication)

   b. *?[Il ladro e   il poliziotto]$_i$ si$_i$ sono caduti e$_i$ adosso e$_i$.
          the thief and the cop   self/RECIP are fallen   on.top
          'The thief and the policeman fell on top of themselves/each other.'
          (Rizzi 1986:73)

   c. [Il ladro e   il poliziotto]$_i$ sono caduti e$_i$ l'uno   addosso all'altro.
          the thief and the cop   are fallen   the-one on.top to.the-other
          'The thief and the policeman fell on top of each other.'
          (Rizzi 1986:73)

The chain formation analysis also correctly predicts a contrast in raising clauses with a clitic experiencer, as shown in (7). If the clitic is pronominal, no problem arises (7a). If the clitic is reflexive, the result is ungrammatical (7b). Again, any set of chains will violate Rizzi's Chain Condition.

(7) a. Gianni$_i$ non gli$_j$ sembra e$_j$ [e$_i$ fare il suo dovere].
          Gianni not him.DAT seems   to.do the his duty
          'Gianni does not seem to him to do his duty.'
          (Rizzi 1986:75)

   b. *Gianni$_i$ si$_i$ sembra e$_i$ [e$_i$ non fare   il suo dovere].
          Gianni self seems   not to.do the his duty
          'Gianni seems to himself not to do his duty.'
          (Rizzi 1986:76)

The chain formation approach correctly predicts the contrasts shown above, as well as others discussed by Rizzi (1986). However, as we will now see, this approach also faces an empirical challenge.

1.2 Evidence against the Chain Formation Analysis

A number of cases have been observed in which an argument undergoes long A-movement, then binds the crossed DP. One derivation of this kind involves raising past an experiencer in English (8). The raised subject *Carol* can bind the experiencer *herself*.

(8) *Carol*$_i$ seems to herself$_i$ [t$_i$ to have been quite fortunate].[1]

The well-formedness of this example is not predicted by the chain formation approach. Rizzi (1986) proposes that the experiencer in (8) is embedded in a PP and therefore does not c-command

---

[1] For the remainder of the article, I will use a trace (*t*) to represent traces (copies) of movement. For discussion, see section 2.3.

the gap in the embedded clause. As a result, a well-formed chain can be constructed from the matrix and embedded subject positions. However, as Pesetsky (1995:105) notes, a Principle C violation arises if the experiencer is coindexed with an R-expression in the embedded clause (9a). Moreover, a quantified experiencer can bind a pronoun in the embedded clause (9b). These examples suggest that the experiencer does indeed c-command into the embedded clause.

(9) a. *Mary$_i$ seems to him$_j$ [t$_i$ to like John$_j$].
    b. Mary$_i$ seemed to no one$_j$ [t$_i$ to like him$_j$ very much].

Apparently, the preposition *to* is invisible for c-command here. Pesetsky proposes that a DP that can bind out of a PP is in a ''cascade'' structure, whose PP node actually dominates the bound constituent (see also Phillips 1996). In any case, if the experiencer c-commands the embedded subject position, the chain formation approach predicts that (8) should be ungrammatical, contrary to fact.

Another case of raising past an experiencer involves English *strike . . . as* (10). Again, the raised subject can bind the experiencer.

(10) Bill$_i$ strikes himself$_i$ [t$_i$ as (being) rather clever].

Rizzi provides two possible accounts of cases like (10). First, he argues that (10) cannot involve raising because this would violate Burzio's Generalization. Under Burzio's Generalization, a verb without an external argument cannot assign structural Case; thus, if *strike* assigns structural Case to the experiencer, it must have an external argument. However, subsequent research has shown that Burzio's Generalization cannot be maintained in this form (Marantz 1991, Harley 1995). There are numerous examples of passive or unaccusative verbs whose internal argument has structural Case. For example, in clauses with a theme and a benefactive argument in the Bantu language Kichaga, either internal argument may become the subject of the passive, while the other argument triggers object agreement/pronoun incorporation, italicized in (11).[2]

(11) a. M̀kà n-á̃-í̃-*kì*-lyí-í-ò.
       wife FOC-SP-PRES-OP-eat-APPL-PASS
       'The wife is being benefited/adversely affected by someone's eating it.'
       (Bresnan and Moshi 1990:153)
    b. Kyò k-í̃-*m̃*-lyì-í-ò.
       it   SP-PRES-OP-eat-APPL-PASS
       'It (i.e., food) is being eaten for/on him/her.'
       (Bresnan and Moshi 1990:154)

Moreover, it is not obvious that the experiencer does have structural Case, as we will see in section 3.3.1. *Strike . . . as* also allows idiom chunks (12a) and expletives (12b) in subject position, a traditional test for raising.

---

[2] A reviewer suggests that the same point can be made by the English passive *John was given a book.* However, see the discussion of (26) below.

(12) a. ?The cat strikes me as being completely out of the bag by now.
    b.   It strikes me as likely to rain.

Still, Rizzi argues that no Chain Condition violation should arise even if *strike . . . as* does involve raising. He claims that *wh*-movement of the experiencer can license a parasitic gap (*pg*) in the *as*-predicate.

(13) Who$_i$ did the pamphlet strike t$_i$ as being insulting to pg$_i$?

Since a parasitic gap cannot be c-commanded by the licensing trace of *wh*-movement, this would suggest that the experiencer does not c-command the *as*-predicate. However, the speakers I have consulted find (13) unacceptable, preferring both (14a), with no parasitic gap, and (14b), with a genuine *wh*-trace in the *as*-predicate. Moreover, an R-expression in the embedded clause triggers a Principle C violation if it is coindexed with the experiencer (14c). These contrasts suggest that, in fact, the experiencer does c-command the *as*-predicate.

(14) a. ?*Who*$_i$ did the pamphlet strike t$_i$ as being insulting to him$_i$?
    b. ?*Who*$_i$ did the pamphlet strike you as being insulting to t$_i$?
    c. *The pamphlet struck him$_i$ as being insulting to John$_i$.

Given these observations, the chain formation approach does not predict the well-formedness of (10).

Another problematic case is the passive of a double object construction in Dutch. The indirect object (IO) in Dutch c-commands the direct object (DO) in an active double object construction, just as in English (Barss and Lasnik 1986). For example, an IO quantifier can bind a pronoun embedded in the DO (15a), but not vice versa (15b). Dutch judgments are from Hotze Rullmann (personal communication), unless otherwise noted.

(15) a.   Ik toonde iedere leeuw$_i$ zijn$_i$ trainer.
             'I showed every lion$_i$ its$_i$ trainer.'
    b. ??Ik toonde zijn$_i$ trainer iedere leeuw$_i$.
        ??'I showed its$_i$ trainer every lion$_i$.'

Nevertheless, only the lower DO can become the subject of the passive (16a). Word order is flexible in Dutch because of the possibility of topicalization, but the IO cannot bear nominative case or trigger verb agreement (16b).[3]

(16) a.   Het boek werd Mary gegeven.
         the book was Mary given
         'The book was given to Mary.'
         (Koster 1978:156)

---

[3] In (16), I use examples from the literature, but the same contrast holds if *gegeven* 'given' is replaced by *getoond* 'shown', parallel with (15) and (17). (17) is pragmatically odd with *gegeven*.

b. *{Zij werd / De meisjes werden} het boek gegeven.
 she was / the girls were the book given
 'She was / The girls were given the book.'
 (Den Dikken and Mulder 1991:71)

(16a) is directly parallel to the English raising construction with a matrix experiencer. The base position of the higher argument c-commands the base position of the lower one; nevertheless, the lower argument raises past the higher one to the subject position. As in the raising construction, the derived subject can bind the internal argument.

(17) Jan_i werd zichzelf$_i$ t$_i$ getoond.
 Jan becomes himself shown
 'Jan was shown to himself.'

Again, the chain formation approach predicts (17) to be ungrammatical.

1.3 The External Argument Generalization

We are faced with a dilemma: the chain formation approach makes the correct predictions for the cases involving reflexive clitics, but not for the cases involving English raising with an experiencer, or the Dutch double object passive. One possible solution to the dilemma, proposed by Pesetsky (1995), accounts for the restrictions of reflexive clitics in another way: namely, to restrict reflexive clitics to the external argument role (Marantz 1984, Kayne 1988). Under this view, a grammatical reflexive clitic derivation actually involves movement of a lower argument to subject position, as in a passive. The reflexive clitic is coindexed with this derived subject.

(18) Jean$_i$ se$_i$ voit t$_i$.
 Jean self sees
 'Jean sees himself.'

If reflexive clitics must be external arguments, then the reflexive clitic derivations in section 1.1 are correctly predicted to be ungrammatical, since all of these cases involve passive, unaccusative, and raising clauses, which lack an external argument. The cases in section 1.2 are correctly predicted to be grammatical, since these do not involve reflexive clitics. We return in section 4 to the derivation in (18). Here, however, we will see that there are cases involving nonclitic (full DP) anaphors, which are also subject to binding restrictions like those discussed by Rizzi (1986). These cannot be captured by the external argument generalization.

For example, in Albanian, the lower object of a double object construction can raise to the subject position of a passive (Massey 1990, 1992). The dative IO is generated in a position c-commanding the DO. Thus, in the active (19a), the IO *Dritës* can bind the reflexive DO *veten*. The reflexive DO can also scramble to an Ā-position above the IO, with LF reconstruction to its base position if it is bound by the IO (19b).

(19) a. Murati$_i$ ia tregoi Dritës$_j$ veten$_{i/j}$.
         Murat.NOM CL showed Drita.DAT self.ACC
         'Murat$_i$ showed Drita$_j$ himself$_i$/herself$_j$.'
         (Massey 1992:61)
     b. Murati$_i$ ia tregoi *veten$_{i/j}$* Dritës t$_j$.
         (Massey 1992:62)

The DO cannot bind the IO from the higher Ā-position in (19b), as shown by the weak crossover effect in (20a). However, the DO can bind the IO after undergoing A-movement to the subject of the synthetic passive (20b). Here, no weak crossover violation arises.

(20) a. *Agimi   ia ktheu *secilin libër$_i$*   autorit   të tij$_i$ t$_i$.
         Agim.NOM CL return each   book.ACC author.DAT its
         'Agim returned to its$_i$ author each book$_i$.'
         (Massey 1992:74)
     b. *Secili libër$_i$*   iu kthye   autorit   të tij$_i$ t$_i$.
         each   book.NOM CL returned.NACT author.DAT its
         'Each book$_i$ was returned to its$_i$ author.'
         (Massey 1992:75)

Although the derived subject can bind a possessive DP embedded in the IO, as in (20b), it cannot bind the IO itself (21). Massey argues that (21) is ruled out by the Chain Condition.

(21) *Drita$_i$ iu tregua   vetes$_i$ t$_i$ prej artistit.
       Drita.NOM CL show.NACT self.DAT   by   the.artist
       'Drita$_i$ was shown to herself$_i$ by the artist.'
       (Massey 1992:71)

The chain formation approach does predict the contrast between (20b) and (21), though it faces other problems, as we saw above. However, the external argument generalization does not predict the ungrammaticality of (21). The reflexive *vete* is a full DP, not a clitic, and it need not merge as an external argument, as shown in (19).

Another logically possible analysis is that the chain formation approach is correct, but that complex anaphors, such as English *himself* or Dutch *zichzelf,* simply do not give rise to Chain Condition violations. However, this analysis cannot be maintained. Albanian reflexive *vete* and reflexive clitics are apparently monomorphemic, but complex anaphors can also trigger Chain Condition violations. For example, the Georgian reflexive *tavis tav* is complex, consisting of a reflexive head *tav* and a genitive reflexive possessor *tavis.* Yet A-scrambling in Georgian can cause binding violations with *tavis tav.*

A-scrambling is a change in word order that does not affect grammatical relations, but can affect binding relations (Mahajan 1990). For example, in Georgian, an object normally cannot bind a reflexive possessor contained in the subject (22a). However, the object can A-scramble to a position c-commanding the subject, from which it can bind the reflexive possessor (22b). Nevertheless, an A-scrambled object cannot bind the subject itself (23).

(22) a. ??Tavisi_i deida   Nino-s_i   xaṭav-s.[4]
        self's   aunt.NOM Nino-ACC draw-PRES
        'Her_i aunt is drawing Nino_i.'

  b. *Nino-s_i* tavisi_i deida t_i xaṭav-s.

(23) *Vano-s_i*   tavisi tav-i_i   t_i xaṭav-s.
     Vano-ACC self's self-NOM   draw-PRES
     (lit.) 'Himself_i is drawing Vano_i.'

Parallel contrasts have been observed in German (Webelhuth 1989), Hindi (Mahajan 1990, McGinnis 1998), Korean (Frank, Lee, and Rambow 1996), and Japanese (Koizumi 1995, Miyagawa 1997, Yatsushiro 1998), again with complex anaphors. Thus, internal complexity cannot account for the absence of violations with *himself* and *zichzelf.* Moreover, although the ungrammaticality of examples like (23) is predicted by the chain formation approach, it is not predicted by the external argument generalization.

   Note that the ill-formedness of (23) does not result from a ban on nominative anaphors, which are grammatical in Georgian (see also Woolford 1999).

(24) Vano-m_i dairçmun-a   tavisi tav-i_i.
     Vano-ERG convince-AOR self's self-NOM
     'Vano_i convinced himself_i.'
     (Harris 1981:41)

In short, while the chain formation analysis faces empirical challenges, it correctly accounts for a wide range of facts.

2 Two Derivations for Long A-Movement

The preceding discussion seems to yield contradictory results. Rizzi's chain formation analysis of chains captures a wide range of phenomena, including both clitic and full DP reflexives, yet it faces troubling counterexamples. I will argue that the apparent contradiction arises because the cases presented above involve two different types of derivations.

   In section 2.1, I review two theories of long A-movement—one EPP-driven and one Case-driven—and propose that both theories are correct.[5] In section 2.2, I argue that the predictions of the proposed analysis can be sharpened by framing it within the phase theory of syntax. In section 2.3, I explore the implications of a phase-theoretic analysis for the formulation of Case and θ-requirements.

---

   [4] Accusative and dative case are morphologically identical in Georgian. However, arguments marked ACC are nominative (absolutive) in the ergative case system of the aorist tense/aspect, while arguments marked DAT remain dative in the aorist.
   [5] I will assume, rather than argue, that Case and EPP features play a role in syntactic derivations generally.

2.1 Case and Locality in A-Movement

Much of our interest has focused on cases of long A-movement—cases of the form shown in (25), where XP is in an argument position c-commanding YP, and YP is in an argument position c-commanding the trace of XP. Here, we will consider what makes long A-movement possible.

(25)   XP … [YP … [… t …]]

It has been argued extensively in the literature that syntactic movement obeys some type of relativized minimality principle. Rizzi's (1990) Relativized Minimality predicts that cases like (25) are ungrammatical: only the closest A-position, here YP, can be the antecedent of the trace. However, the Attract theory of movement (Chomsky 1995) allows certain cases of (25). According to this theory, a *probe* head seeks the closest *target* phrase bearing an appropriate feature. Thus, in the simplest case of A-movement, only the argument generated highest can move. This option yields, for example, the asymmetrical passive of the double object construction in English. The indirect object *each worker* asymmetrically c-commands the direct object *his paycheck* in (26a) (Barss and Lasnik 1986). The higher argument can raise to the subject position of the passive (Spec,T) as shown in (26b), while the lower argument cannot (26c).

(26) a.   I sent each worker$_i$ his$_i$ paycheck.
       b.   *Each worker*$_i$ was sent t$_i$ his$_i$ paycheck.
       c.   *A paycheck*$_i$ was sent the worker t$_i$.

In (26), there is no way for the lower argument to raise to the subject position of the passive. As we have seen, however, long A-movement is possible in other contexts. Two different kinds of analysis have been proposed for this type of movement. One relates movement to Case: an argument with structural Case is eligible for A-movement, while an argument with inherent Case is ineligible (Baker 1988a,b). According to this view, the indirect object in (26) has structural Case, so it can (and must) move to subject position of a passive, while the direct object has inherent Case, so it cannot. In other languages, the direct object can have structural Case instead, so it can move to the subject position. Under this view, the difference between structural and inherent Case is often not directly reflected in the morphological case system. It is generally assumed that inherent Case is assigned at the merged position of the DP, and that only arguments with structural Case can trigger subject or object agreement or undergo A-movement.[6]

This proposal can be straightforwardly formulated within a minimalist framework. Suppose that a structural Case feature makes a DP accessible for A-movement.[7] Then an EPP feature of
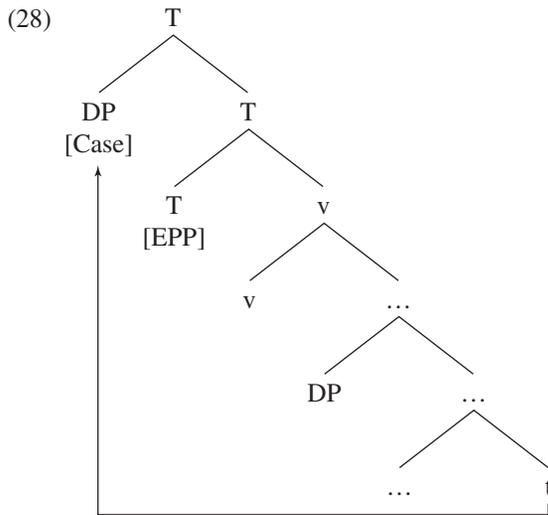
---

[6] Since English does not show object agreement, it is difficult to test whether the direct object in (26) has inherent Case or not, especially if it is merged in different positions in transitive and ditransitive clauses (Pesetsky 1995, Pylkkänen 2002). It is also assumed that arguments with inherent Case do not undergo alternations in morphological case, for example changing case when their clause is embedded under a causative or exceptional Case-marking verb. However, arguments with quirky structural Case also resist such alternations.

[7] There seem to be cases in which a phrase not marked with structural Case undergoes A-movement, such as locative inversion with a PP subject. One possibility is that in this case, the probe seeks a P-feature and ignores intervening DPs.

T will target the (φ-features of the) closest argument with structural Case, moving it to Spec,T. Chomsky (2001:27) argues that EPP can even target a DP whose structural Case feature has already been checked. For example, there is no grammatical way to complete the derivation in (27). *John* has an unchecked Case feature, but the closest DP to the matrix T is the expletive *it*. Chomsky proposes that the expletive is inactive for movement to Spec,T because its Case feature has been checked. Nevertheless, it blocks T from attracting *John*.

(27) _____ seems *it* was said [John to be the best candidate].

On the other hand, if a DP with inherent Case lacks a structural Case feature entirely, as schematized in (28), it will not be accessible for movement and thus will not block a probe from targeting a lower DP.

(28)

```
              T
             / \
        DP      T
       [Case]  / \
             T     v
            [EPP]  / \
                  v   …
                     / \
                   DP    …
                        / \
                      …     t
```

Note that on this view, the EPP features do not target arguments with inherent Case, even though they have φ-features. This is expected if a (checked or unchecked) structural Case feature makes an argument visible for A-movement.

   The other well-known analysis of long A-movement relates movement to structural properties of the clause (Marantz 1984, 1993, Baker 1988a, Woolford 1993, Ura 1996). Under Ura's analysis, for example, the lower object of a double object derivation is generated as a complement of the main verb, while the higher object is generated in the specifier of a higher verb phrase, which I will call *Applicative Phrase* (ApplP), after the literature on Bantu applicatives. The lower object can move to the subject position of the passive if Appl has an EPP feature (in Ura's terms, a strong feature) that attracts it, as schematized in (29). From its new position in Spec,Appl, the argument can move again to Spec,T. According to this view, Appl lacks an EPP feature in the English double object construction, so the lower argument cannot leapfrog over the higher argument to subject position.
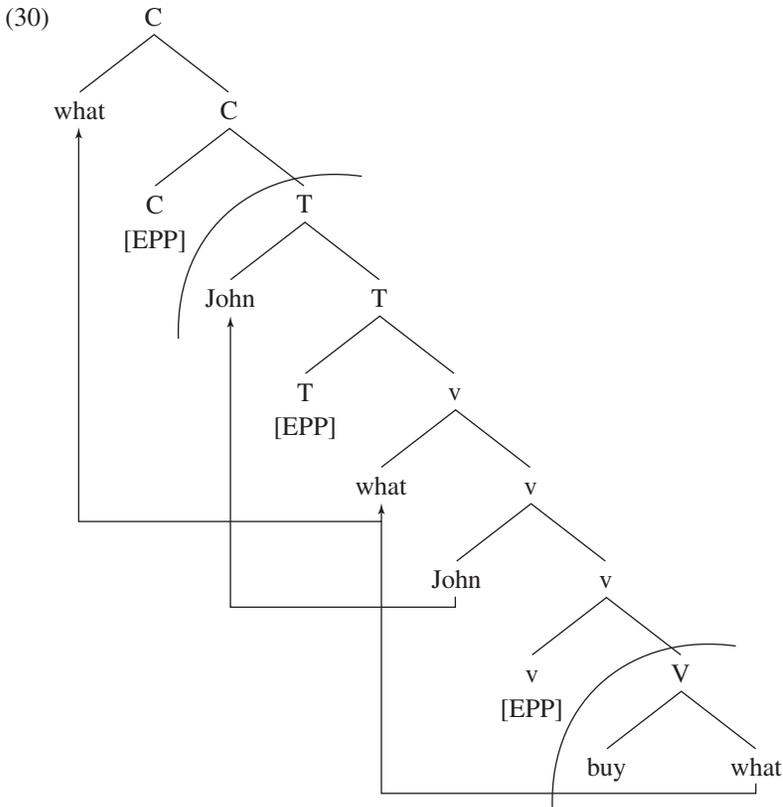
(29)
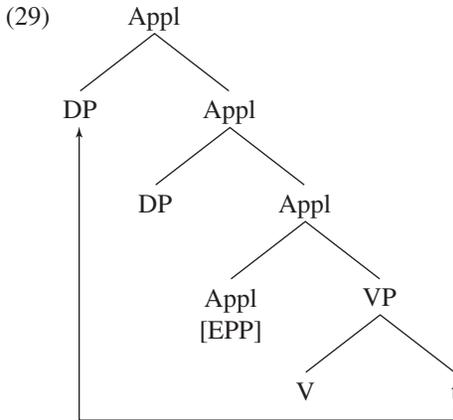
I propose that, in fact, both the Case-driven and the EPP-driven derivations occur, but in different contexts. The two types of long A-movement have different structural properties. One such difference relates to the higher argument. In the EPP-driven derivation, the argument generated higher may have structural Case. If so, it is itself eligible for A-movement. On the other hand, in the Case-driven derivation, the argument generated higher has inherent Case. As a result, it is ineligible for A-movement.

2.2 A Phase-Theoretic Analysis

One question not yet addressed is why Appl should ever have an EPP feature to attract a lower argument. Chomsky's (2000, 2001) phase theory of syntax provides a possible answer to this question. According to this theory, the syntactic derivation proceeds in phases that are sent off to LF and PF before the derivation continues. Chomsky proposes that CP and transitive vP are phases, though not necessarily the only ones. Any specifiers of the phase head are collectively known as the *edge* of the phase, while its complement is the *domain* of the phase. Following Chomsky (2000), I assume that the domain of a phase is impenetrable to any further movement operations as soon as the phase is complete.[8] Thus, a constituent that does not move to the edge of the phase is trapped in its domain. On the other hand, an EPP feature can be added to the phase head, providing an escape hatch for a lower argument to move to the edge. Chomsky (2000: 19) proposes that a nonphasal EPP feature, like that of T, is obligatory, while phasal EPP features are optional.

The derivation of *What did John buy?* is shown in (30). The domain of each phase is marked with a curved line. Before the vP phase is complete, an EPP feature on v attracts the object *wh*-phrase to the edge. The obligatory EPP feature of T then attracts the external argument to Spec,T. A phasal EPP feature then attracts the *wh*-phrase to the edge of CP.

---

[8] See Chomsky 2000, Nissenbaum 2000, Legate 2003b. By contrast, Chomsky later proposes that the domain of a phase remains accessible to syntactic operations until the next phase is complete (Chomsky 2001). The broad outlines of the proposed analysis appear to be compatible with either view, but for concreteness I adopt the stricter assumption.

(30)

C
  what   C
        C   T
        [EPP]
              John   T
                    T   v
                    [EPP]
                          what   v
                                John   v
                                      v   V
                                      [EPP]
                                            buy   what

This derivation raises a locality issue. Under the standard view, T attracts the closest argument with structural Case, as noted with regard to the superraising derivation in (27). We can ask, then, why the *wh*-phrase in Spec,v does not block movement of the external argument to Spec,T. According to Chomsky (2001:27), this is because locality is evaluated at LF. Since the *wh*-phrase moves again to Spec,C before the next phase is complete, only the trace of *what* intervenes between *John* and its trace. Only the head of a chain can check the features of a head, so the trace does not trigger a locality violation. We will return to similar derivations in section 4.

We have seen that the two proposed derivations for long A-movement differ with respect to the Case of the higher argument: inherent in the Case-driven derivation, and potentially structural in the EPP-driven derivation. Phase theory provides an additional basis for distinguishing between the two cases. Recall that in the EPP-driven derivation, Appl has an EPP feature that attracts a lower DP into its specifier. This suggests that the derivation involves an ApplP phase. If so, then the lower DP must be attracted into Spec,Appl if it is to escape the domain of the phase and move on to subject position. On the other hand, in the Case-driven derivation there is no EPP feature on Appl: a lower DP moves past Appl without even merging with it. If the domain of the phase becomes accessible as soon as the phase is complete, then the movement just described

is possible only when ApplP is not a phase. Assuming phase theory, then, we can expect independent differences between the EPP-driven and Case-driven derivations: the former involves phasal ApplP, while the latter does not.

Chomsky proposes a number of tests for phasehood in English. However, many of these do not easily carry over to other languages. I take the central prediction of phase theory to be that phases are syntactically, semantically, and phonologically distinct from nonphases. Thus, we expect phasal ApplP to be distinguishable from nonphasal ApplP on the basis of semantic or phonological criteria, or both.

Elsewhere (McGinnis 2000, 2001), I have proposed that the phasal/nonphasal split is linked to a distinction made by Pylkkänen (2001, 2002). Pylkkänen argues that there are two types of applicatives, with different structural and semantic properties (31). *High* applicatives are merged with VP; semantically, they express a relation between an individual (Spec,Appl) and the event denoted by the VP. *Low* applicatives are merged with DP; they express a relation between two individuals.

(31) a. *High applicative*   b. *Low applicative*
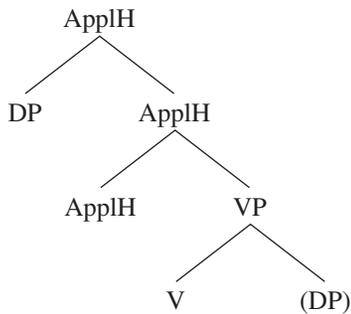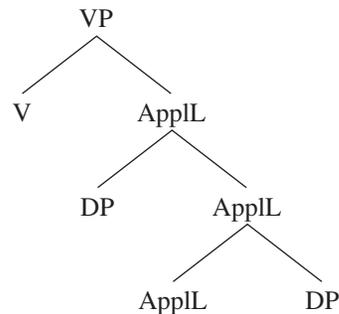
Pylkkänen argues that these two types of applicatives can be distinguished on semantic and syntactic grounds. Low applicatives, like the English double object construction (32a), express a direct semantic relation between two DPs. Thus, they are not compatible with unergatives (32b) or verbs that are incompatible with a transfer of possession (32c).

(32) a.   I wrote Mary a letter.
     b. *I ran Mary. (= 'I ran for Mary.')
     c. *I held Mary the bag. (= 'I held the bag for Mary.')

By contrast, a high applicative, like the Kichaga benefactive, need not express a direct semantic relation between two DPs. It can occur with unergatives (33a) and with verbs that disallow transfer of possession (33b).

(33) a. N-ǎ-í-zrìc-í-à   mbùyà.
        FOC-SP-PRES-run-APPL-FV friend
        'He is running for a friend.'
        (Bresnan and Moshi 1990:149)

b. N-ã-í-lyì-í-à   m̀kà kélyà.
FOC-SP-PRES-eat-APPL-FV wife food
'He is eating food for/on his wife.'
(Bresnan and Moshi 1990:148)

English double object constructions and Kichaga benefactives differ in another respect: as we have seen, long A-movement is possible in the corresponding passive in Kichaga, but not in English. Such movement in Kichaga cannot result from inherent Case on the higher, applied argument, since, as shown above, this argument can itself move to subject position (11a) and can trigger ordinary object agreement/pronoun incorporation when the other argument moves to subject (11b).

Let us suppose, then, that high ApplP is a phase, while low ApplP is not. This proposal captures the different possibilities for moving the lower argument. If high ApplP is a phase, then it should have such an escape hatch, which allows a lower argument to move past the applied argument to the subject position. In low applicatives, there is no ApplP phase, and therefore no escape hatch: locality allows only the higher DP to move to subject position.

(34) a. *High applicative*   b. *Low applicative*
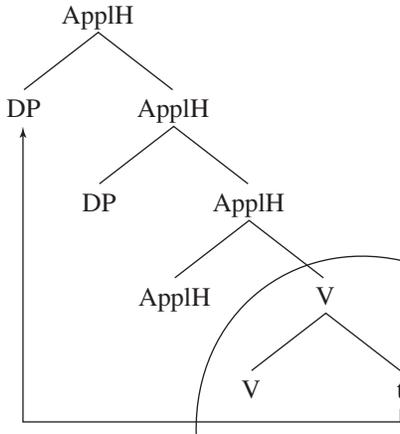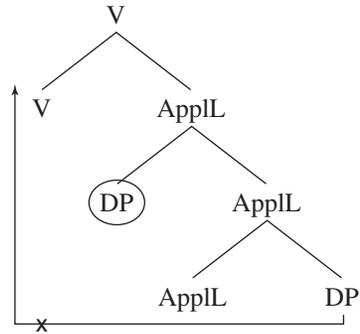
Pylkkänen (2002:105ff.) notes that a certain type of causative can attach outside a low applicative, but cannot attach outside a high applicative or outside the vP containing the external argument. As she points out, this supports the view that vP and high ApplP are phases, as distinct from low ApplP.[9]

As noted above, phase theory predicts that phases are phonologically distinct from nonphases. There is some evidence that high and low applicatives can be phonologically distinct (McGinnis

_____

[9] Pylkkänen argues that the phrase here called vP is really VoiceP and that the causatives in question (in Bemba and Finnish) attach to a projection below VoiceP and high ApplP, which she calls vP. The distinctions are important, but not for present purposes.

2000, 2001). According to Seidl (2001), phonological phrasing in Bantu applicatives is related to the availability of long A-movement for the theme. A symmetric applicative allows such movement in the passive. In the corresponding active, both objects are generally bracketed in a phonological phrase with the verb. On the other hand, an asymmetric applicative does not allow long A-movement in the passive; in the active, the two objects are generally in separate phonological phrases. Seidl argues that the DO raises to Spec,Appl in a symmetric (here, a high) applicative (35a),[10] while in an asymmetric (here, a low) applicative, the IO raises to Spec,v (35b). Under the present account, both cases involve movement to the edge of the lowest phase: ApplHP in (35a), and vP in (35b).

(35) a. $[_v[_{ApplH}$ IO DO $[_V$ t]]]
      b. $[_v$ IO $[_V[_{ApplL}$ t DO]]]

The phonological phrasing facts follow if the domain of a phase is phrased separately from its edge, as might be expected if the domain of the phase is sent to PF before the derivation continues.[11] In (35a), the IO and DO will be phrased together, because both are in the edge of the ApplP phase. In (35b), they will be phrased separately, because the IO is in the edge of the vP phase, while the DO is inside its domain (VP). Seidl's analysis supports the view that high applicatives are phases, while low applicatives are not.

2.3 A-Movement across a Phase Boundary

The proposed account has certain implications for the LF interpretation of A-movement. According to this account, the EPP-driven derivation involves successive-cyclic A-movement across a phase boundary. No such case arises in Chomsky 2000, 2001. According to Chomsky, an example like (36) has only two phases: the transitive vP where *John* originates, and the matrix CP. If the edge of a phase is accessible at the next phase, then the θ-position and the Case position of *John* are both accessible at the matrix CP phase.

(36) $[_{CP}$ John was said [t to be considered [t to have $[_{vP}$ t won the race]]]].

On the other hand, if successive-cyclic A-movement crosses a phase boundary, the θ-position and Case position of the moved argument will not be accessible at the same phase. Nevertheless, I will argue that such movement is permitted by independently necessary mechanisms of phase theory.[12]

---

[10] In (35a), the moved DO tucks in beneath the merged IO. This possibility appears to be parameterized (see footnote 30).

[11] A reviewer points out that by themselves, the phonological phrasing facts are equally compatible with the view that low and not high applicatives are phases, assuming that neither object moves. The main claim of interest here is that there is a phonological correlate to the high/low distinction.

[12] Legate (2003b) gives evidence from reconstruction that vP is a phase in passive and unaccusative clauses as well as in transitive clauses. If so, then derived subjects always undergo successive-cyclic A-movement across a phase boundary. Legate's proposal motivates a separation of Move and Agree: a probe cannot attract an argument embedded within the domain of a lower phase, but can enter an Agree relation with it, as shown in (i), where finite T agrees with the plural DP *two men*. Legate (2003a) argues that (i) involves ''indirect'' Agree: the features of the DP propagate up the tree to finite T via successive v probes.

(i) There T_{fin} $[_{vP}$ seem to $[_{vP}$ be *two men* in the room]].

If A-movement can cross a phase boundary, we can ask how to achieve the effects of the Chain Condition—requiring each A-chain to have a θ-position and a Case position. Within the minimalist framework, Case theory need not make reference to chains.[13] Heads and phrases can be generated with various kinds of uninterpretable features, including Case and EPP features, as well as uninterpretable features driving *wh*-movement, topicalization, and so forth. These features must be checked before LF; otherwise, the derivation will violate Full Interpretation. Under this view, the Case requirement can be imposed on the base position of a DP alone. A DP must either enter the derivation with a structural Case feature or merge with a head that assigns it inherent Case. General mechanisms will then ensure that an unchecked structural Case feature violates Full Interpretation at LF. Moreover, an uninterpretable feature that has been checked cannot be checked again. Chomsky proposes that an uninterpretable feature makes a phrase ''active'' for movement; once it is checked, the phrase becomes inactive. Thus, for example, a *wh*-phrase that has checked its *wh*-feature cannot move successive-cyclically into a second interrogative CP.

(37) *[$_{CP}$ *Who*$_i$ do you wonder [$_{CP}$ t$_i$ (if) he met t$_i$]]?

Similarly, a DP that has checked its uninterpretable Case feature cannot move successive-cyclically into another Case position.

Under the minimalist approach, thematic requirements on DPs also follow from general principles that apply to all phrases, not just DPs. Like any constituent, a DP must be merged in a position where it receives an LF interpretation. Moreover, a phrase must retain this interpretation even if it moves, presumably to satisfy Full Interpretation. It is this requirement that raises a specific issue for phase theory. If all movement is contained within a single phase, LF has simultaneous access to the base position and the moved position. However, if movement crosses a phase boundary, LF must construct the interpretation of the moved phrase, phase by phase.[14]

For example, in the proposed analysis of the Albanian long passive in (38) (= (20b)), the DP *secili libër* 'each book' combines semantically with V in the domain of the ApplP phase, while it checks Case in Spec,T, which is in the domain of the CP phase. The moved DP can be interpreted only if it can be correctly linked with its θ-position, yet this position is already interpreted when the matrix CP is sent to LF.

(38) [$_{CP}$ *Secili libër*$_i$ iu kthye   [$_{ApplP}$ t$_i$ autorit   të tij$_i$ t$_i$]].
          each book.NOM CL returned.NACT   author.DAT its
       'Each book$_i$ was returned to its$_i$ author.'

Note that the same issue arises in successive-cyclic *wh*-movement, which can cross an indefinitely large number of phase boundaries.

(39) [$_{CP}$ *Who*$_i$ did you [$_{vP}$ t$_i$ think [$_{CP}$ t$_i$ that Mary [$_{vP}$ t$_i$ wanted [$_{CP}$ t$_i$ to [$_{vP}$ t$_i$ meet t$_i$]]]]]]?

---

[13] A reviewer correctly points out that if Case features are deleted from copies of a moved DP when the DP itself checks Case, some kind of chain is necessary to ensure this. Such an analysis is not assumed here because it is incompatible with the proposed account of reconstruction differences between A- and Ā-movement (see discussion below).

[14] Thanks to a reviewer for raising this issue. See Chomsky 2001:40–41 for a slightly different account, in which EPP features yield multiple occurrences (copies) of a single phrase by adding elements to an ''occurrence list.''

Here the *wh*-phrase *who* can be interpreted only if it can be correctly linked with its θ-position, yet this position is clearly not in the same phase as *who*.

Evidently, phase theory requires some way to link a moved phrase with a position in an earlier phase. I propose that this linking is achieved by means of the properties shared by the moved element and its trace. Under the copy theory of movement, the trace is an identical copy of the moved element. For example, consider the derivation of *Who did Mary meet?* At the first phase of LF interpretation, shown in (40), the copy of *who* combines semantically with the main verb. At subsequent phases, any new aspects of the interpretation of *who* (e.g., its clausal scope) are added to the semantic information already associated with the phrase.

(40)
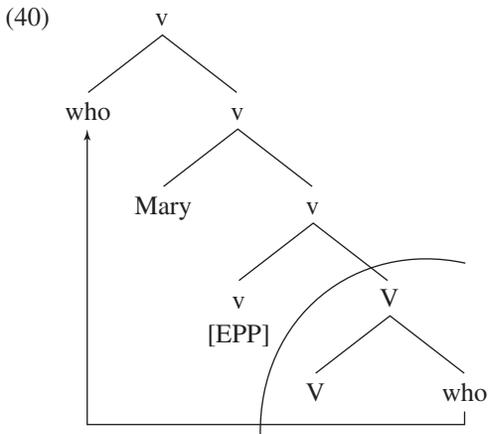
The same mechanism also permits the interpretation of A-movement across a phase boundary. For example, in the Albanian long passive, the copy of *secili libër* 'each book' first combines semantically with V. At the next phase, any new aspects of the interpretation of *secili libër* (e.g., scope and theme/rheme interpretation) are added to the semantic information associated with this phrase.

(41)
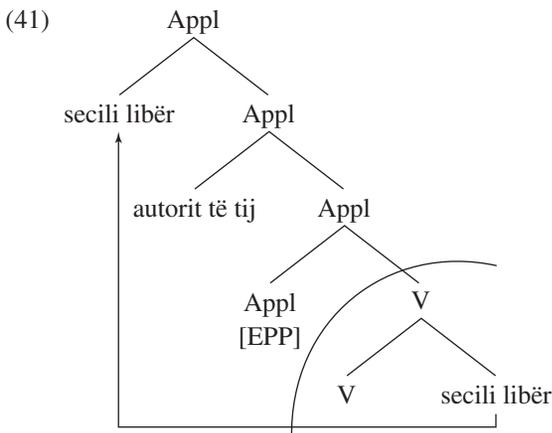
In short, we can eliminate the need for a special condition governing the Case and θ-properties of argument chains. The Case Filter reduces to a requirement on the base position of a DP, along with a general requirement that uninterpretable features be checked before LF. Thematic requirements reduce to general LF algorithms that assign a semantic interpretation to the base position of a constituent and associate a moved element with its copy.

It should be noted that the properties shared by a moved element and its copy seem to differ for A- and Ā-movement. In fact, it has been suggested that only Ā-movement leaves copies, while A-movement leaves traces (Fox 2000). This distinction is motivated by the different behavior of the two types of movement with respect to reconstruction. For example, A-movement can obviate a Principle C violation (42a), while Ā-movement cannot (42b). This follows if a copy of Ā-movement violates Principle C, while a trace of A-movement does not. Fox suggests that copies require a checked Case feature: the trace in (42a) is not a copy because it has not checked Case.

(42) a. [Every argument that John$_i$ is a genius]$_j$ seems to him$_i$ t$_j$ to be flawless.
      (Fox 2000:195)

   b. *[Which argument that John$_i$ is a genius]$_j$ did he$_i$ believe ~~[which argument that John$_i$ is a genius]$_j$~~?
      (Fox 2000:195)

There are additional arguments against A-movement reconstruction as well (Chomsky 1995, Lasnik 1999). For example, A-movement cannot reconstruct to repair a Principle B violation (43). Moreover, while a subject quantifier can take scope under clausemate negation (44a), a quantifier that has raised into a higher clause cannot reconstruct into the embedded clause to take scope under negation, as in (44b).

(43) *John$_i$ expected [him$_i$ to seem to me [t$_i$ to be intelligent]].

(44) a. It seems [that everyone isn't there yet]. $\forall > \neg , \neg > \forall$
     b. Everyone$_i$ seems [t$_i$ not to be there yet]. $\forall > \neg , *\neg > \forall$

Nevertheless, Boeckx (2001) argues that A-movement can indeed reconstruct.[15] For example, consider (45). As in (44a), in (45a) *everyone* can take scope above or below negation, while in (45b), as in (44b), it can only take scope above negation. On the other hand, the present tense of the relative clause [*who shows up*] has a future-shifted interpretation: (45b) means that everyone who will show up is likely not to be a psycholinguist. Boeckx argues that, given the structural constraints on sequence-of-tense interpretations, the relative clause can receive this interpretation only within the embedded infinitival clause.

(45) a. [Everyone who showed up] was not a psycholinguist.
     b. [Everyone who shows up] is likely [[~~everyone who shows up~~] not to be a psycholinguist].

---

[15] Thanks to a reviewer for raising this issue. Some authors maintain that the ambiguity in examples like (45a) is also the result of A-movement reconstruction (see Sauerland 2003 for a recent treatment). If so, then matters are more complex than Boeckx's analysis suggests. For example, it may be that the final step of movement to a Case-checking position can reconstruct, perhaps because it takes place within a single phase.

Boeckx proposes that A-movement leaves copies, but that its copies typically have an unchecked Case feature, which makes them inaccessible for LF interpretation. Because Case checking is complete within the relative CP in (45), it is accessible for interpretation, while the remainder of the DP dominating *everyone* is inaccessible until it checks Case in the matrix Spec,T.

For our purposes, the identity between an A-moved constituent and its copy can be established by means of a syntactic index shared by both copies. Chomsky (1995:227) proposes that each lexical item inserted into the syntax has a numeration index, indicating how many times it has been inserted from the lexicon. When a phrase undergoes a step of movement, both copies have the same numeration index.[16] Thus, multiple copies of an item resulting from movement can be distinguished from multiple copies resulting from multiple insertions. As long as the numeration index of a copy with unchecked Case is accessible at LF, an A-moved phrase can be linked with its copy, just like an Ā-moved phrase. I will assume that this approach is correct. For ease of exposition, I will continue to represent copies as *t*, rather than as full copies.

3 Lethal Ambiguity

3.1 The Analysis

As demonstrated in section 1, some cases of long A-movement give rise to binding violations, while others do not. This dichotomy is unexpected under the chain formation analysis, which predicts that a moved argument can never bind an argument it crosses over. I will argue that the two types of cases arise from the two different derivations for long A-movement.

Let us begin by asking what it means for one argument to bind another. In the Minimalist Program, it is assumed that binding involves LF c-command by an argument with the same referential index. However, the notion of referential index is problematic, since binding does not always obtain between referential DPs. For example, *no one* and *the average man* can bind anaphors, such as *himself* in (46), even though these DPs do not refer to entities in the real world.

(46) a. No one$_i$ voted for himself$_i$.
     b. The average man$_i$ is pleased with himself$_i$.

Suppose, then, that referential indices do not play a role in binding. Instead, binding involves copying the numeration index of the antecedent to the bound element at LF.[17] For example, when the first phase of (46a) is interpreted, the preposition *for* is combined semantically with the anaphor, then with the verb. When the second phase is interpreted, v is combined with the event described by the VP, then with the external argument *no one*. The numeration index of *no one*

---

[16] I will assume that a complex phrase is identified by the index of its head. Another possibility is that it is identified by the set of numeration indices of its constituents.

[17] Copying could be avoided if the anaphor and the antecedent can enter the syntax with the same numeration index. This should be possible only if a complex phrase is identified by the index of its head (see footnote 16).

is then copied to the anaphor at LF. I will assume that the numeration index of the anaphor itself is deleted, though other possibilities remain.[18]

We can now return to the binding violations that sometimes arise under long A-movement. I have proposed that the numeration index is used to link a moved phrase with its copy, and also to link an anaphor with its antecedent. As a first pass, let us suppose that the shared index prevents the moved argument from being linked with its copy.

(47) *XP_i . . . [YP_i . . . [. . . t_i . . .]]

This is essentially the proposal made by Rizzi (1986), except that (47) contains numeration indices instead of referential indices. However, as we have seen, this proposal cannot be maintained, because the derivation in (47) is grammatical under certain conditions. More information must be available to link XP with its copy at LF when (47) is grammatical.

I propose that this additional information is an *address* derived from the syntactic position of a moved element.[19] Suppose that when a step of movement takes place, the address of the moved element is indexed onto its copy. The address and the numeration index together can be used at LF to link the moved element with its copy. Specifically, we can adopt Chomsky's (1995: 252) suggestion that each position of a moved element is identified by its sister. Chomsky notes that there are two ways of formalizing this suggestion. In one, the moved element is identified by the constituent its sister dominates. Under this approach, two phrases merged with the same head will have different addresses, since the sister of the higher phrase will dominate the lower phrase. Alternatively, the moved element could be identified by the sister itself. In this case, two phrases merged with the same head will have the same address, since their sisters are projections of the same head. I assume that the numeration index of the head plays a role in this identification, so that, for example, two specifiers of the same v head have the same address, while specifiers of two different v heads have different addresses.

Adopting the latter approach makes it possible to connect the grammaticality or ungrammaticality of (47) with the two different derivations for long A-movement. In the EPP-driven derivation, two DPs merge with the same head—Appl, in the cases discussed so far. Under the approach just suggested, then, these two DPs have the same address. If one DP binds the other, they also share a numeration index (48a). In this case, the semantic interpretation of the copy of XP cannot be unambiguously linked with XP. Both XP and YP have the same address and the same index, so either one can be linked with the copy of XP. I propose that this ambiguity is lethal: it cannot be resolved even to allow convergence. (48a) is simply an uninterpretable syntactic object that crashes at LF. On the other hand, in the Case-driven derivation, XP and YP merge with different heads (48b). The two DPs then have the same numeration index, but not the same address. In this case, XP can be unambiguously linked with its copy.

---

[18] Other questions remain as well. For example, within phase theory it is not clear how to determine c-command across a phase boundary. I leave this issue for further research.

[19] Manzini (1992) proposes that all dependencies can be captured using a positional address and an index. For Manzini, however, the address is only the Case position.

(48) a. *XP$_i$ YP$_i$ α . . . [. . . t$_{i,α}$ . . .]
     b. XP$_i$ β . . . [YP$_i$ α . . . [. . . t$_{i,β}$ . . .]]

A reviewer points out that the linking procedure that gives rise to lethal ambiguity can be seen as a recasting of Relativized Minimality, in that a copy is linked with the closest antecedent that has the same index and address. In the framework adopted here, this linking relation ensures not that the copy or trace is identified by antecedent government, as in the theory of Relativized Minimality, but that the moved element can be fully interpreted. Nevertheless, the two proposals are similar in spirit. The possibility of uniting locality conditions on movement with an account of Chain Condition effects was anticipated by Rizzi (1990:128 n. 12).

3.2 An Illustration of the Analysis

Let us consider a derivation of each type. Recall that long movement in the passive double object construction gives rise to a binding violation in Albanian, but not in Dutch. Suppose we attribute this difference to a derivational difference between the two passives: Dutch has the Case-driven derivation of long A-movement, while Albanian has the EPP-driven derivation. If this is correct, then the indirect object in Dutch should have inherent Case, and ApplP should be nonphasal, so that Appl has no EPP feature available to attract the theme. As noted above, the indirect object cannot raise to subject position of the Dutch passive (49a) (= (16b)), even though it c-commands the DP. This supports the claim that it has inherent Case. Moreover, the Dutch double object construction has the semantics of a low applicative, as expected for nonphasal ApplP. A dative argument cannot be added to an unergative verb (49b) or to a verb incompatible with transfer of possession (49c) (Hotze Rullmann, personal communication).

(49) a. *{Zij werd / De meisjes werden} het boek gegeven.
         she was / the girls   were   the book given
         'She was / The girls were given the book.'
     b. *Ik rende hem.
         I ran   him
         'I ran for him.' (OK: Ik rende voor hem.)
     c. *Ik at haar de speculaas   op.
         I ate her the gingerbread up
         'I ate the gingerbread for her.' (OK: Ik at de speculaas voor haar op.)

If Albanian has the EPP-driven derivation, this means that the indirect object need not have inherent Case and that ApplP is phasal.[20] Regarding the eligibility of the dative argument for

---

[20] The indirect object in Albanian has dative morphological case. I assume that a DP with dative case can have a structural Case feature, as with quirky dative subjects in Icelandic.

movement to the subject position, there appears to be interspeaker variation. If it is in subject position, a quantificational dative argument should be able to bind a pronoun contained in the nominative argument, as in (50). Reportedly, some speakers find this example ungrammatical (Victoria Massey, personal communication) while others find it acceptable (Dalina Kallulli, personal communication).

(50) Secilit djalë$_i$ iu dha   t$_i$ paga   i tij$_i$.
     each   boy.DAT CL gave.NACT pay.NOM his
   'Each boy was given his pay.'

However, ApplP does seem to have the semantics of a high applicative in Albanian, as expected if it is phasal. Dative arguments can be combined with an unergative verb (51a) or with a verb incompatible with transfer of possession (51b) (see also Pylkkänen 2002).

(51) a. Agimi   i   vrapon babës   së tij.
        Agim.NOM CL runs   father.DAT his
        'Agim runs for his father.'
        (Dalina Kallulli, personal communication)
     b. Agimi   i   mban Dritës   çanten   time.
        Agim.NOM CL holds Drita.DAT bag.ACC my
        'Agim holds my bag for Drita.'
        (Dalina Kallulli, personal communication)

The evidence suggests, then, that the passive double object construction has the EPP-driven derivation in Albanian and the Case-driven derivation in Dutch. As we have seen, the Albanian case gives rise to a lethal ambiguity (52a) (= (21)), while the Dutch case does not do so (52b) (= (17)). We can now observe in detail how this contrast comes about.

(52) a. *Drita$_i$ iu tregua   vetes$_i$ t$_i$ prej artistit.
        Drita.NOM CL show.NACT self.DAT   by   the.artist
        'Drita$_i$ was shown to herself$_i$ by the artist.'
     b. Jan$_i$ werd   zichzelf$_i$ t$_i$ getoond.
        Jan becomes himself   shown
   'Jan was shown to himself.'

Consider the first phase, which is the high ApplP in Albanian (53). The DP *Drita* merges with V. Appl in turn merges with V and with the dative DP *vetes*. Appl also has an EPP feature that allows the Theme to escape the domain of the ApplP phase. The new address of *Drita,* ⟨Appl⟩, is indexed onto its copy. At LF, the numeration index of *Drita* is copied to *vetes,* yielding binding. Now *Drita* and *vetes* have the same address and numeration index. As a result, *Drita* and its copy cannot be unambiguously linked. The address index on the trace of *Drita* directs it to be linked with a specifier of Appl with the index *i,* but there are two DPs that meet this description. A lethal ambiguity arises and the derivation crashes.

(53)
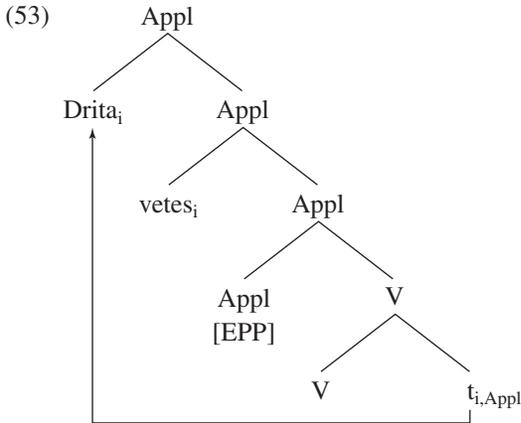
Consider a variant of the proposed analysis, in which the address of the copy is indexed onto the moved element. Under this approach, *Drita* would have the address index $\langle V \rangle$, while *vetes* would have the address $\langle Appl \rangle$. Under this view, lethal ambiguity should not arise: only one copy has the address $\langle V \rangle$, so it could be identified as the copy of *Drita*. I conclude that the proposed analysis is to be preferred, since it allows an account of the ungrammaticality of (52a). We also expect that a moved phrase cannot pass on its destination address to copies that have been sent to LF. If the domain of a phase is sent to LF as soon as the phase is complete, a step of movement can only index its destination address onto copies within its own phase.[21] Thus, an additional step of movement cannot rescue a derivation from lethal ambiguity. For example, although *Drita* moves from Spec,Appl to Spec,T, as shown in (54), its new address $\langle T \rangle$ can only be indexed onto its copy in Spec,Appl, not to its base copy, which has already been sent to LF. Thus, the base copy of *Drita* must be linked to the copy in Spec,Appl. Since it cannot be unambiguously linked to this copy, the derivation crashes.

The derivation just described contrasts with that of the Dutch double object passive. In Dutch, ApplP is not a phase: let us assume that the first phase is the matrix CP, as shown in (55). I represent SOV languages like Dutch as head final. The low Appl head merges with the theme *Jan* and with the dative DP *zichzelf,* assigning inherent Case to this DP. Appl is not a phase, so it cannot have an EPP feature added. V then merges with Appl, followed by v and T. T has an obligatory (nonphasal) EPP feature, so it seeks the closest DP with structural Case, *Jan,* which raises to Spec,T. The dative DP has inherent Case, so it does not block movement of *Jan.*

---

[21] Indeed, the simplest algorithm may require each step of movement to pass on the new address to the copy of that step alone. Thanks to a reviewer for raising this issue.

(54)

(55)
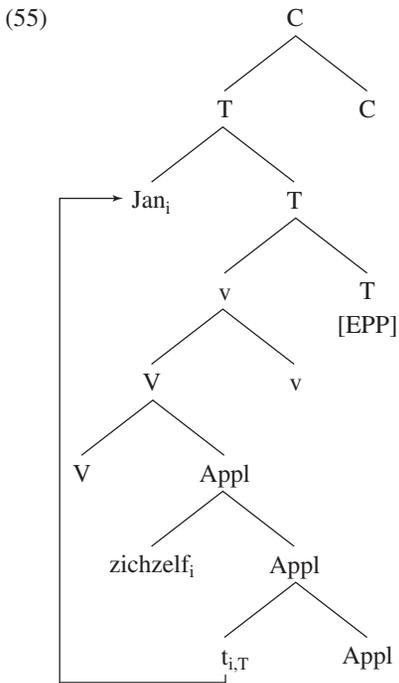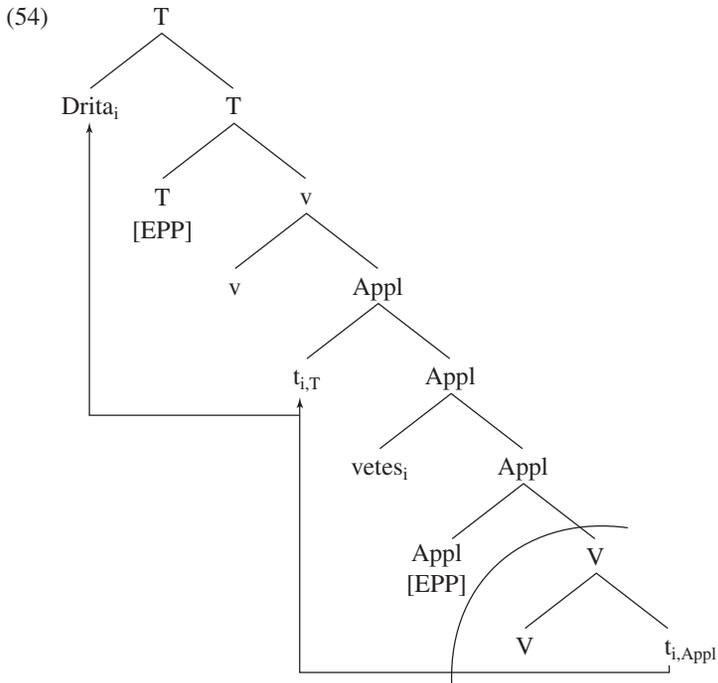
At LF, the dative anaphor *zichzelf* is assigned the numeration index of its antecedent, *Jan.* Here, *Jan* is in Spec,T, while *zichzelf* is in Spec,Appl. The copy of *Jan* has the address index ⟨T⟩, so no lethal ambiguity arises. The moved element is unambiguously interpreted as *Jan,* and the derivation converges.[22]

The facts just described suggest that the EPP-driven derivation of long A-movement can give rise to a lethal ambiguity, while the Case-driven derivation will not. The proposed analysis makes it possible to account for the binding restrictions in some cases of long A-movement and the absence of such restrictions in others. By contrast, the chain formation approach incorrectly predicts that all cases of long A-movement will be subject to the same restrictions. And, as we have seen, the external argument generalization applies only to reflexive clitics, so it incorrectly predicts that full DP reflexives will not be subject to such binding restrictions at all. The proposed analysis also makes clear predictions regarding the structural properties associated with the two different types of long A-movement. Where binding is ruled out, the argument generated higher may have structural Case and may undergo A-movement; and the phrase in which it is generated is a phase, with an optional EPP feature to attract a lower argument. Where binding is possible, the argument generated higher has inherent Case and cannot itself undergo A-movement; moreover, the phrase in which it is generated is not a phase, so it has no EPP feature. In the next section, we will explore how additional cases of long A-movement fare with respect to these predictions.

At this point, a remark is in order regarding intermediate copies of A-movement. Chomsky (1995:303) suggests that such copies are actually deleted at LF, just as copies in general are deleted at Phonetic Form (PF).[23] Under the proposed analysis, however, this proposal cannot be maintained. Intermediate copies that give rise to a lethal ambiguity cannot be deleted in order to rescue the derivation. Indeed, deletion of an intermediate position before LF interpretation would make it impossible to link the moved phrase with the interpretation of its base position, since each time a phrase moves, its new address is passed on only to the copy created by that step of movement. A reviewer points out that if a lethal ambiguity causes the derivation to crash immediately (here, immediately upon reaching LF), subsequent deletion of intermediate copies of A-movement would not rescue the derivation. Thus, if intermediate copies can be deleted at LF, deletion must be delayed at least until after a moved argument is linked with its copy.

If intermediate copies are interpretable at LF, then reconstruction to an intermediate A-position should be possible. The prediction appears to be fulfilled. For instance, consider (56), comparable to example (45), where the relative clause must reconstruct into an embedded clause to obtain a future-shifted reading. In (56), the relative clause containing *John* cannot reconstruct

---

[22] If passive and unaccusative vP are also phases (see footnote 12), then movement to Spec,T in (54) crosses a phase boundary. The base copy of *Jan* then has the address ⟨v⟩, which again unambiguously links it with the moved phrase.

[23] Thanks to a reviewer for raising this issue.

into the base position, where the R-expression would be bound by the pronoun *him,* yielding a Principle C violation. Therefore, it must reconstruct to an intermediate position of A-movement.

(56) a. Everyone John$_i$ meets at the party is likely to seem to him$_i$ to be interesting.
  b. [Everyone] ~~John meets . . .~~] is likely [[~~everyone~~ John$_i$ meets . . .] to seem to him$_i$ [[~~everyone John meets . . .~~] to be interesting]].

Unlike the lethal ambiguity cases, (56) is compatible with optional deletion of intermediate copies. Nevertheless, this case supports the view that such copies are not automatically deleted before LF interpretation.[24]

3.3 Additional Contrasts

In section 1.2, we saw that lethal ambiguity does not arise in English raising with *seem* and *strike.* There are also a number of cases in which lethal ambiguity does seem to arise. These can be divided into three general types: A-scrambling, the double nominative derivation in Japanese, and movement past a dative reflexive clitic in clauses with a derived subject.

I have proposed that lethal ambiguity arises in the EPP-driven derivation, but not in the Case-driven derivation. This proposal makes two types of predictions. The argument generated higher in the Case-driven derivation should not be able to raise to the subject position, since it has inherent Case. In the EPP-driven derivation, the argument generated higher may or may not have structural Case, so it should raise to the subject position at least in some cases. Moreover, ApplP is predicted to be high (phasal) in cases where lethal ambiguity can arise, but low (non-phasal) where it cannot. Although it is not always clear how to test both predictions for a given case, they appear to be confirmed in general.

3.3.1 English Raising with an Experiencer In English raising with *seem,* the embedded subject can raise to a higher subject position (57a), but neither the experiencer DP (57b) nor the *to*-PP (57c) can do so.

(57) a. *Mary* seemed to Bill [t to be clever].
  b. **Bill* seemed to t [Mary to be clever].
  c. **To Bill* seemed t [Mary to be clever].

---

[24] A reviewer points out that the proposed analysis makes broad crosslinguistic predictions about the structural properties of applicatives. In the simplest case, there are three possible systems: (I) the English-type low applicative, in which only the higher object can move to the subject position of the passive, and such movement does not result in lethal ambiguity; (II) the Dutch-type low applicative, in which only the lower argument can move to subject position, and again no lethal ambiguity arises; (III) the Albanian-type high applicative, in which potentially either object can move to the subject position of the passive, and movement of the lower argument over the higher one can result in lethal ambiguity. I have argued elsewhere (McGinnis 1998, 2001) that Icelandic has type I, that Georgian has synthetic passives of type II (see also Cuervo 2003 for Spanish), and that French and Italian have type III. A number of factors can make these predictions difficult to test. For example, in Japanese, it appears that two internal arguments can be base-generated in either order (Koizumi 1995, Miyagawa and Tsujioka 2003). In Greek, dative anaphors are ruled out altogether (Everaert and Anagnostopoulou 1997).

It is possible that the ungrammaticality of (57b–c) arises because *Mary* has an unchecked Case feature. However, movement of the experiencer is ungrammatical even when the embedded clause is finite, as in (58b–c). Thus, it is plausible that the experiencer has inherent Case.

(58) a. It seemed to Bill [that Mary was clever].
    b. *Bill* seemed to t [that Mary was clever].
    c. *To Bill* seemed t [that Mary was clever].

In English raising with *strike,* the embedded subject can raise to subject position (59a), but the experiencer DP cannot do so (59b). Again, this is also true if the embedded clause is finite, if the examples in (60) are parallel to those in (59).

(59) a. *Mary* struck Bill [as t clever].
    b. *Bill* (was) struck t [as Mary clever].

(60) a. It struck Bill [that Mary was clever].
    b. *Bill (was) struck [that Mary was clever].

On the other hand, examples like (61) are fine.

(61) Bill was struck t [by Mary's cleverness].

At first glance, the possibility of raising the experiencer in (61) seems problematic for the view that the experiencer in (59) has inherent Case. However, there is reason to believe that the experiencer is merged in different positions in (59) and (61). In (59)–(60), *strike* means something quite similar to *seem to* or *appear to:* the clausal argument can be described as the subject matter of a perception (see Pesetsky 1995). In (61), *strike* means something more like *amaze* or *impress:* the *by*-phrase is a causer, not a subject matter argument. A reviewer also points out that the active version of (61) (*?*Mary's cleverness struck Bill*) is quite odd, unlike the active examples in (59)–(60). It has been argued that different thematic interpretations arise from different structural configurations (Hale and Keyser 1993). If so, then it seems reasonable to propose that both arguments are generated in different structural positions in (59) and (61), and that the experiencer receives inherent Case in (59), but not in (61).

According to the proposed analysis, the experiencer in raising derivations with *seem* and *strike* is predicted to be generated in the specifier of a low (nonphasal) applicative. The prediction seems to be borne out. As noted above, low applicatives express a relation between two entities, an applied argument and a theme. Let us suppose that the theme can be clausal, rather than a DP. As predicted, inherent-Case experiencers seem to require the additional argument. A clause is ungrammatical if it contains an experiencer and no other arguments.

(62) a. *It$_{\text{expl}}$/There seemed to a man.
    b. *It$_{\text{expl}}$/There struck a man.

The cases in (62) may be ruled out by specific thematic requirements of *seem* and *strike.* However, as far as I am aware, English has no verbs of the type shown in (62).

There are verbs with a causer external argument and an experiencer object, as shown in (61) and (63a). In this context, however, the experiencer does not appear to be in Spec,Appl, since ApplP normally permits an additional argument, but here, an additional argument is impossible (63b).[25]

(63) a. The article angered Bill.
     b. *The article angered Bill (at) the government.

This contrast supports the view that the experiencer is in a different position in these cases than in the raising cases. If there is no applicative head in (62), the experiencer cannot receive inherent Case from Appl.

If the above reasoning is correct, then the experiencer in a raising clause in English occurs in a low applicative with inherent Case, so the embedded subject can raise past it without giving rise to lethal ambiguity. In the next section, I will argue that parallel cases in Italian do give rise to lethal ambiguity because, at one stage of the derivation, the experiencer and the embedded subject both occupy the edge of the same phase boundary.

3.3.2 Dative Clitics   As noted at the outset, dative clitics in passive, raising, and unaccusative derivations can give rise to lethal ambiguity. As we saw in (3), repeated here, these derivations are grammatical with pronominal clitics, but not with reflexive clitics.
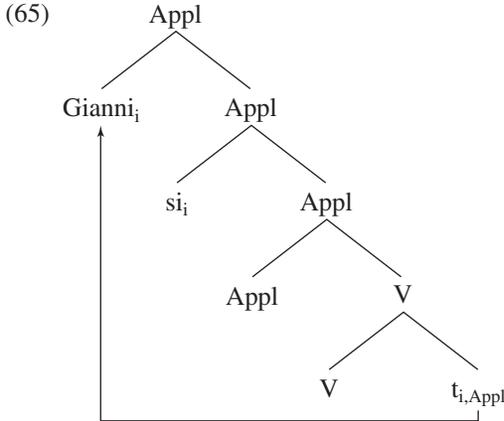
(64) Gianni gli   / *si è   stato affidato.
     Gianni him.DAT / *self was been entrusted
     'Gianni was entrusted to him/*himself.'

Under the proposed analysis, the contrast is predicted if the dative clitic is generated in the specifier of a phasal ApplP. If the theme is to escape the domain of the ApplP, an EPP feature must first attract it to Spec,Appl, as shown in (65). If the shifted theme binds the clitic, lethal ambiguity arises: both arguments have the same index and the same address, so *Gianni* cannot be unambiguously linked with its copy.[26]

It is not clear whether dative clitics in French and Italian have structural Case: there is little empirical evidence to indicate whether these clitics undergo A-movement before undergoing clitic movement to Spec,T. However, there is evidence that a dative clitic is merged in the specifier

---

[25] Pesetsky (1995) argues that although *the article* and *the government* cannot cooccur, they have different thematic roles (causer and target, respectively). See Pesetsky 1995 for further discussion of this target/subject matter restriction.

[26] As noted in section 1.1 (example (5a)), the counterpart with a nonclitic reflexive is acceptable. I assume that in French and Italian, the direct object is merged in the position from which it c-commands the nonclitic indirect object.

(65)
```
                    Appl
                   /    \
              Gianni_i   Appl
                 ↑      /    \
                       si_i   Appl
                             /    \
                          Appl     V
                         /    \   /  \
                        V     V  t_{i,Appl}
```

of a high applicative. It is compatible with an unergative verb, as shown in (66).[27]

(66) Gianni_i (gli_j)   ha   parlato t_j.
     Gianni (him.DAT) has spoken
     'Gianni spoke (to him).'

I will assume that dative clitics in Italian and French are always merged in the specifier of a high applicative. As a result, a reflexive dative experiencer clitic in a raising clause gives rise to lethal ambiguity in Italian and French.

3.3.3 A-Scrambling   As we have seen, lethal ambiguity arises when an object A-scrambles over a subject. If the subject is bound by the scrambled object, the result is ungrammatical. Example (67a) (= (23)) shows this for Georgian. Otherwise, A-scrambling is grammatical (67b) (= (22b)).

(67) a. *Vano-s_i   tavisi tav-i_i   t_i xaṭav-s.
        Vano-ACC self's self-NOM   draw-PRES
        (lit.) 'Himself_i is drawing Vano_i.'
     b. Nino-s_i   tavisi deida   t_i xaṭav-s.
        Nino-ACC self's aunt.NOM draw-PRES
        'Her_i aunt is drawing Nino_i.'

Under the proposed analysis, an A-scrambled object undergoes EPP-driven movement over the

---

[27] Thanks to Ivano Caponigro, Cristiano Chesi, and Elena Guerzoni for Italian judgments and discussion. It should be noted that the equivalent of (33a) is ungrammatical in Italian (i). It can be repaired by adding a directional adjunct (ii), but here the verb appears to be unaccusative, since it takes the *essere* auxiliary.

   (i) *Gianni gli   ha corso.
       Gianni him.DAT has run
       'Gianni ran to/for him.'
   (ii) Gianni gli   è corso incontro.
        Gianni him.DAT is run   toward
        'Gianni ran toward him.'

subject. The first phase of the derivation (transitive vP) is shown in (68). If an EPP feature is added to the phase head, the object can move to Spec,v.

(68)
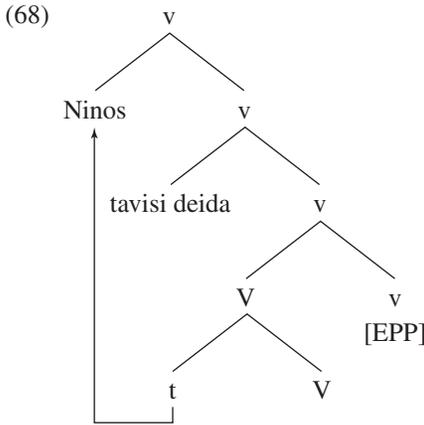
Scope interpretations in Japanese suggest that the object moves on to Spec,T to check an EPP feature, while the logical subject remains in Spec,v, checking Case on T by Agree (Miyagawa 2001). Nash (1995) argues that in Georgian, both the object and the subject can occupy Spec,T. As expected, the A-movement in (68) is possible even though the logical subject does not have inherent Case: it can trigger verb agreement and bear nominative morphological case.

Note that we expect OS order in (67) regardless of whether the object moves alone to Spec,T, or whether both arguments move. Richards (1997b, 2001) argues that movement obeys Featural Cyclicity: each moved phrase moves as close as possible to the attracting probe. In movement to multiple specifiers, a probe targets the highest phrase first (here, *Ninos*), then a lower one (here, *tavisi deida* 'her aunt'). The lower phrase "tucks in" below the higher one, where it is closer to the probe.

The cases above involve A-scrambling an object over the subject. A DO can also A-scramble over an IO in a double object construction. For example, in Georgian, the DO *bavšvi* 'child' cannot bind a reflexive possessor *tavis* embedded in the IO (69a) unless it A-scrambles above the IO (69b). However, the DO can never bind a reflexive IO (69c).

(69) a. ??Nino-m tavis$_i$ deda-s bavšv-i$_i$ anax-a.
Nino-ERG self's mother-DAT child-NOM showed-AOR
'Nino showed the child$_i$ to its$_i$ mother.'

b. Nino-m *bavšv-i*$_i$ tavis$_i$ deda-s t$_i$ anax-a.

c. Nino-m$_i$ *bavšv-i*$_j$ tavis tav-s$_{i/*j}$ t$_j$ anax-a.[28]
Nino-ERG child-NOM self's self-DAT showed-AOR
'Nino$_i$ showed the child$_j$ to herself$_i$/*itself$_j$.'

---

[28] A nonsubject binder for the Georgian *tavis tav* is grammatical for some speakers (though perhaps not all: see Harris 1981:24). Even for these speakers, (69c) is ruled out (Léa Nash, personal communication).

This contrast is accounted for if a scrambled DO undergoes A-movement to Spec,Appl, where the IO is merged. It is worth noting that, unlike the DO, the external argument can bind the IO in (69c). Thus, as predicted, an IO reflexive can have the same address as the DO, provided the two are not coindexed.

Under the proposed analysis, the indirect object should be compatible with structural Case. This prediction seems to be fulfilled. Plural arguments in Georgian trigger a form of agreement, the verbal suffix *-t,* which third person datives trigger only if they are subjects (Harris 1981:217). Example (70a) illustrates this agreement with an experiencer subject in an active clause. In a nonactive clause, an indirect object can raise to subject, triggering plural *-t* agreement (70b).[29] This suggests that an indirect object can have (quirky) structural Case in Georgian.

(70) a. Mat Ana u-qvar-t.
         they Ana APPL-love-DAT.PL
         'They love Ana.'
         (Aronson 1990:333)
     b. Bavšveb-s$_i$ t$_i$ tavianti$_i$ mšobleb-i   da-e-ḳarg-a-t.
         children-DAT selves' parents-NOM PV-APPL.NACT-lose-AOR-PL
         'The children$_i$ were lost to their$_i$ parents.'
         (Léa Nash, personal communication)

A second prediction of the proposed analysis is that Georgian has a high applicative. It is difficult to establish whether Georgian applicatives are high or low in Pylkkänen's sense. It is reportedly impossible to combine an applicative with an unergative verb (Léa Nash, personal communication). This suggests that Georgian applicatives are low. On the other hand, an applied dative can be the sole argument of a clause, which suggests that Georgian applicatives can be high (71). I leave this issue unresolved.

(71) Ga-m-e-ǧvijeba.
     PV-1.DAT-APPL.NACT-be.awake.FUT
     'I(DAT) will wake up.'
     (Aronson 1990:344)

3.3.4 The Double Nominative Derivation   Another case of lethal ambiguity has been observed in Japanese. Japanese allows certain derivations in which both the subject and the object are nominative (Kuno 1973). Although the nominative subject can bind an anaphor embedded in the nominative object, it cannot bind a nominative object anaphor (McGinnis 1995, Miyagawa 2001).

---

[29] Unaccusatives and synthetic passives in Georgian form a morphological class, traditionally known as the second conjugation (Aronson 1990). One subclass of second conjugation verbs is marked with the prefix *i-*. Harris (1981) calls these synthetic passives, but since some appear to be unaccusative (Nash 1995:322), I will simply call them nonactive (Embick 1997). The applicative form of the prefix is *e-*. Georgian also has a periphrastic passive, in which the indirect object cannot raise to subject; it is realized as a postpositional phrase instead (Harris 1981).

(72) a. [Taroo-to Hanako]-ga_i [otagai-no_i   gakusei]-ga yato-er-u.
     Taro-and Hanako-NOM each.other-GEN students-NOM hire-can-PRES
     'Taro and Hanako_i can hire each other's_i students.'
     (Miyagawa 2001:311)
   b. *[Taroo-to Hanako]-ga_i otagai-ga_i   yato-er-u.
     Taro-and Hanako-NOM each.other-NOM hire-can-PRES
     'Taro and Hanako_i can hire each other_i.'
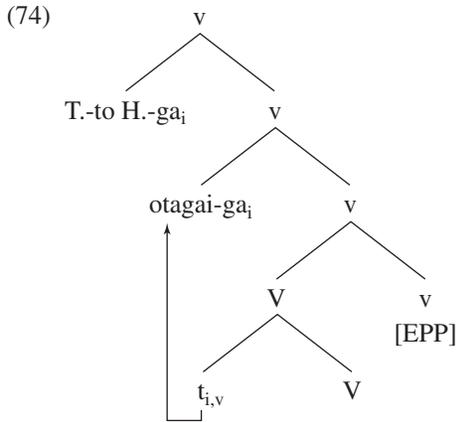   (Miyagawa 2001:310)

Miyagawa (2001) argues that the nominative object occupies a specifier of T, while the subject is in a higher Spec,T (see also Ura 1996). Evidence for this claim comes from quantifier scope. If the object is accusative, it takes scope below sentential negation (73a). If the object is nominative, it takes scope above negation (73b).

(73) a. Taroo-ga zen'in-o osie-rare-nakat-ta (yo / to omou).
     Taro-NOM all-ACC teach-can-NEG-PAST EXCL / COMP think
     '(I think) Taro was not able to teach all (!).'   *not > all, (*)all > not*
     (Miyagawa 2001:307)
   b. Taroo-ga zen'in-ga osie-rare-nakat-ta (yo / to omou).
     Taro-NOM all-NOM teach-can-NEG-PAST EXCL / COMP think
     '(I think) Taro was not able to teach any (!).'   **not > all, all > not*
     (Miyagawa 2001:307)

Miyagawa proposes that the object moves directly from its base position to Spec,T, where it checks an EPP feature. He relates the availability of this movement to the observation that Japanese DPs are generally unmarked for person, number, or gender. He suggests that if Japanese DPs lack ϕ-features altogether, a given EPP feature can attract more than one DP. The double nominative derivation will then be unavailable in languages whose DPs have ϕ-features. If this proposal is correct, the two nominative DPs occupy specifiers of T, yielding the SO order, as predicted by Featural Cyclicity. If the two DPs have the same numeration index, lethal ambiguity will arise.

On the other hand, if transitive vP is a phase, then the nominative object must move to Spec,v before moving on to Spec,T, as in (74). Under Featural Cyclicity, the observed SO order is possible only if the object can tuck in beneath the external argument in Spec,v.[30] From this position, the two arguments can then move to Spec,T, obeying Featural Cyclicity. Again, coindexing the two arguments will lead to a lethal ambiguity.

---

[30] Rackowski (2002) argues that in Tagalog, a merged argument always tucks in beneath a moved one. I assume that phase heads are parameterized with respect to the order of merger and movement.

(74)

```
                        v
                      /   \
                     /     \
            T.-to H.-ga_i    v
                           /   \
                          /     \
                  otagai-ga_i     v
                     ↑          /   \
                     |         /     \
                     |        V        v
                     |      /   \    [EPP]
                     |     /     \
                     |   t_{i,v}   V
                     |___|
```

Under either derivation, both nominative DPs undergo A-movement to Spec,T and bear nominative case. Thus, the double nominative derivation further supports the prediction that the EPP-driven derivation is grammatical even if both DPs have structural Case.
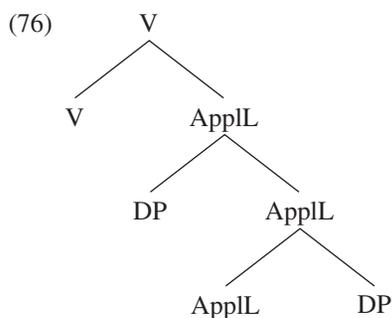
In general, then, the predictions of the proposed analysis are fulfilled. In derivations with a phasal high applicative or vP, a lower argument can undergo long A-movement, but only via EPP-movement to the edge of the phase, where the higher argument is merged. Lethal ambiguity can then arise if the two arguments are coindexed. By contrast, if the higher argument is not generated in the edge of a phase, but has inherent Case, a lower argument can undergo long A-movement across it without giving rise to lethal ambiguity, even if the two arguments are coindexed.

3.4 Multiple Specifiers by Merge

I have proposed that lethal ambiguity arises when a moved phrase cannot be unambiguously linked with its copy. However, each violation involves the configuration in (75). We can ask, then, whether this configuration itself gives rise to ungrammaticality.

(75)

```
               X
             /   \
            /     \
         YP_i      X
                 /   \
                /     \
            ZP_i    … X …
```
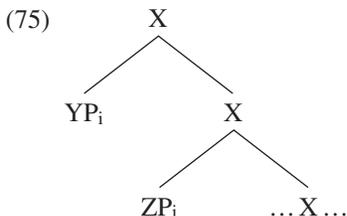
There is evidence to suggest that the configuration in (75) is acceptable. Recall the discussion of high and low applicatives in section 2.2. According to Pylkkänen (2001, 2002), a low applicative, like the English double object construction, merges with two DPs.

(76)

```
            V
           / \
          /   \
         V    ApplL
             /   \
            /     \
          DP     ApplL
                /   \
               /     \
            ApplL    DP
```

Note, however, that the IO can bind the DO in (77). The two arguments merged with Appl have the same index and the same address. If all cases of (75) are ruled out, then (77) should be ungrammatical.

(77) I assigned Mary$_i$ herself$_i$.

Under the analysis proposed here, however, (77) is correctly predicted to be grammatical, since neither DP needs to be linked with a copy. Section 4 presents further evidence that lethal ambiguity arises in linking a moved phrase with its copy.

4 Ā-Movement, Object Shift, and Clitic Movement

4.1 Ā-Movement

So far, our attention has focused on interactions between A-movement and binding. Like A-movement, Ā-movement can undergo successive steps within a clause. Consider the examples in (78), in which an argument undergoes Ā-topicalization. In order to satisfy the binding theory at LF, the topicalized constituent [*the papers that he wrote for Ms. Brown*] must be interpreted in a position where *he* is bound by *every student,* but the R-expression *Ms. Brown* is free (see Lebeaux 1990). The contrast between the two examples shows that a topicalized constituent can be interpreted in an intermediate position, marked t' (Fox 2000). I assume that this position is in Spec,v, at the edge of the vP phase (Nissenbaum 2000). In (78a), the topicalized constituent can be interpreted in an intermediate position at LF, where *he* is bound, but *Ms. Brown* is not. In (78b), by contrast, there is no position in which the topicalized phrase can be correctly interpreted at LF. In position t', *he* is not bound, while in position *t, Ms. Brown* is.

(78) a. *The papers that he$_i$ wrote for Ms. Brown$_j$* every student$_i$ [$_{vP}$ t' asked her$_j$ to grade t].
           (Fox 2000:10)
       b. **The papers that he$_i$ wrote for Ms. Brown$_j$* she$_j$ [$_{vP}$ t' asked every student$_i$ to revise t].
           (Fox 2000:10)

It is standardly assumed that a moved constituent can be interpreted only in positions that it occupies at some stage in the derivation. Thus, (78a) supports the claim that a constituent undergoing Ā-movement moves through an intermediate position in Spec,v, where it can be interpreted at LF. Let us suppose that an Ā-moved element checks Case in the usual way—in this case, by Agree with a higher v. A topicalized reflexive object like that in (79a) will then move to Spec,v, where it has the same index and address as the external argument, as shown in (79b). Nevertheless, this derivation is grammatical.

(79) a. Herself, Mary likes.
     b. [$_{vP}$ herself$_i$ Mary$_i$ [$_{VP}$ likes t$_{i,v}$]]

If DPs with the same address can never be coindexed, (79) should be ungrammatical. However, I argued above that lethal ambiguity does not arise simply from a ban on coindexed specifiers of the same head; instead, it arises when a moved phrase cannot be linked with its copy. Under this view, we can derive the grammaticality of (79) from an independently motivated distinction between A- and Ā-movement.[31] As noted in section 2.3, A- and Ā-movement differ with respect to reconstruction. A copy of Ā-movement is fully accessible at LF, even if this leads to a Principle C violation. On the other hand, A-movement can rescue a Principle C violation, and an A-moved quantifier generally cannot reconstruct (but see section 2.3). This is compatible with the view that LF has access only to the index and the destination address of a copy of A-movement, while it has full access to the interpretation of a copy of Ā-movement.[32]

This distinction predicts the grammaticality of (79). For example, if *herself* in (79) checks Case by Agree, its full meaning is accessible before it moves to Spec,v. When it moves, its new position has the same index and address as *Mary*. However, *herself* and *Mary* are distinct at LF—for one thing, *herself* is an anaphor subject to Principle A, while *Mary* is an R-expression subject to Principle C. Under the proposed analysis, lethal ambiguity arises when a moved phrase cannot be unambiguously linked with its copy. If LF has access to the full interpretation of a copy of A-movement, then the procedure will seek to link the copy of *herself*$_i$ with the moved phrase *herself*$_i$ in Spec,v, not simply with some phrase having index i and address ⟨v⟩. Thus, *Mary* and *herself* will be treated as distinct, and no lethal ambiguity will arise.

Different versions of the chain formation analysis make different predictions with regard to the grammaticality of (79). If the Chain Condition applies only to A-chains, no violation is predicted. In Rizzi's (1986) terms, the (one-membered) A-chain of *herself* is entirely c-commanded by the A-chain of *Mary,* even assuming the vP-internal subject hypothesis, as schematized in (80). The two well-formed A-chains are (*Mary*$_i$, e_i) (*herself*$_i$).

(80) Mary$_i$ [$_{vP}$ e$_i$ [$_{VP}$ likes herself$_i$]]

---

[31] Thanks to Norvin Richards for suggesting this line of argument.

[32] According to Frank, Lee, and Rambow (1996), scrambling an object over a subject can feed anaphor binding but cannot obviate Principle C. This observation remains unexplained if only the index and destination address of a copy of A-movement are accessible at LF. I leave this issue for further research.

On the other hand, Snyder (1992) argues that the ban against strong crossover follows from the same principle that restricts the distribution of dative reflexive clitics. Strong crossover is a violation involving Ā-movement of one phrase over a coindexed phrase (Postal 1971, Wasow 1972, Lasnik 1976). Like *herself* in (79), *who* in (81) undergoes Ā-movement. Here, however, the result is ungrammatical.

(81) *Who$_i$ does he$_i$ like?

If the Chain Condition applies only to A-chains, the evaluated portion of (81) is (82a), parallel to (80). As in (80), no violation arises: the chains (*he$_i$*, *e$_i$*) and (*who$_i$*) each have both a Case position and a θ-position. On the other hand, if the Chain Condition applies to complete chains, including Ā-positions, then the evaluated portion of (81) is (82b). This structure violates the Chain Condition. Recall that, according to Rizzi, a chain cannot omit any intermediate coindexed c-commanding positions. Thus, any chain containing both the base position and the moved position of *who* will also contain *he* and its base position. The resulting chain will have two Case positions and two θ-positions.[33]

(82) a. he$_i$ [$_{vP}$ e$_i$ [$_{VP}$ likes who$_i$]]
        b. who$_i$ [$_{TP}$ he$_i$ [$_{vP}$ e$_i$ [$_{VP}$ likes e$_i$]]]

This analysis correctly predicts the ungrammaticality of strong crossover configurations. However, (79) has a parallel structure, shown in (83). Thus, topicalization of an anaphor is also predicted to be ungrammatical, contrary to fact.

(83) herself$_i$ [$_{TP}$ Mary$_i$ [$_{vP}$ e$_i$ [$_{VP}$ likes e$_i$]]]

On the other hand, the lethal ambiguity analysis predicts the grammaticality of (79), but not the ungrammaticality of (81). This is unproblematic, since an account of (81) is independently available. Recall that a strong crossover configuration arises when a pronoun is coindexed with a phrase that Ā-moves across it. Ungrammaticality also arises when the subject pronoun is co-indexed with an R-expression *contained* in the *wh*-phrase, as in (84) (= (42b)).

(84) *[*Which argument that John$_i$ is a genius*]$_j$ did he$_i$ believe ~~[which argument that John$_i$ is a genius]$_j$~~?

The ungrammaticality of (84) is not predicted by the chain formation analysis: the chain connecting *which argument that John is a genius* and its base position need not include the pronoun *he*, since the two phrases are not coindexed. Instead, (84) is a Principle C violation: the base copy of the R-expression *John* is bound by the pronoun *he*. A Principle C analysis also accounts for the contrast between (79) and (81). In (81), a copy of the R-expression *who* is bound by the pronoun *he*. In (79), the Ā-moved phrase is an anaphor, not an R-expression, so Principle C is not violated.[34]

---

[33] Technical details of Snyder's analysis are omitted here. For example, Snyder's Chain Formation Algorithm forms chains dynamically from the bottom up.

[34] The R-expression in (79) satisfies Principle C because it is not A-bound.

4.2 Object Shift

The proposed contrast between A- and Ā-movement can also account for an otherwise puzzling absence of lethal ambiguity with object shift. In Icelandic, a transitive clause can have an unshifted (85a) or shifted (85b) reflexive object (Ólafur Jónsson, personal communication). If object shift is A-movement to Spec,v, (85b) should exhibit a lethal ambiguity. The shifted object has the same numeration index and address as the external argument in Spec,v, just as in the Japanese double nominative derivation.

(85) a. I   speglinum ser Höskuldur$_i$ ekki (sjalfan) sig$_i$.
        in mirror. the see Höskuldur.NOM not   self.ACC
        'Höskuldur does not see himself in the mirror.'
     b. I speglinum ser Höskuldur$_i$ (*sjalfan*) sig$_i$ t$_i$ ekki [$_{VP}$ t$_i$].

However, it has been argued that Scandinavian object shift is not A-movement, but instead is a kind of phonological movement (Holmberg and Platzack 1995, Chomsky 2001; but see Hiraiwa 2002). Like Ā-movement, phonological movement should leave a semantically interpretable copy. If so, a shifted reflexive is correctly predicted not to give rise to lethal ambiguity.

It has been argued that English also has object movement (Postal 1974, Lasnik and Saito 1991, Branigan 1992, Koizumi 1993, 1995). For example, consider the contrast in (86).

(86) a. #The DA demonstrated [that nothing was certain] [during any of his speeches].
     b.   The DA demonstrated *nothing*$_i$ [t$_i$ to be certain] [during any of his speeches].
   c.   The DA accused none of the defendants [during any of his speeches].

The subject of an embedded finite clause cannot license negative polarity *any* in the matrix clause. Thus, the bracketed modifier in (86a) must be interpreted in the embedded clause, entailing that nothing was certain during any of the DA's speeches. On the other hand, the subject of a nonfinite exceptional case-marking (ECM) clause can license a negative polarity item in the matrix clause, so (86b) can be interpreted to mean that, during his speeches, the DA failed to demonstrate anything to be certain. Koizumi (1993, 1995) proposes that the ECM subject moves to a specifier position (Spec,Agr$_O$), while the verb moves to a higher verbal projection. From its shifted position, the negative subject c-commands the adjunct containing the negative polarity item *any*. An object can also license a negative polarity item, as shown in (86c): again, the object shifts to Spec,Agr$_O$, where it c-commands the adjunct.

Lasnik (1995) argues that such object shift is obligatory in a pseudogapping context, such as (87a). The VP elides, but the object is preserved from ellipsis by shifting out of the VP. Nevertheless, lethal ambiguity does not arise when the external argument binds the object in a pseudogapping context (87b).[35]

---

[35] Thanks to a reviewer for raising this issue.

(87) a. John selected me, and Bill will you [$_{VP}$ ~~select you~~].
      b. Mary nominated herself, and Bill will himself [$_{VP}$ ~~nominate himself~~].

The grammaticality of (87b) is expected under the analysis of Koizumi (1993, 1995) and Lasnik (1995). Note that the verb precedes the object in English, but follows negation and vP adverbs, as in *I will (not) (quickly) fix the sink.* This suggests that the object does not shift to Spec,v; rather, the verb moves to v, while the object shifts to a position below v, as shown in (88).

(88)
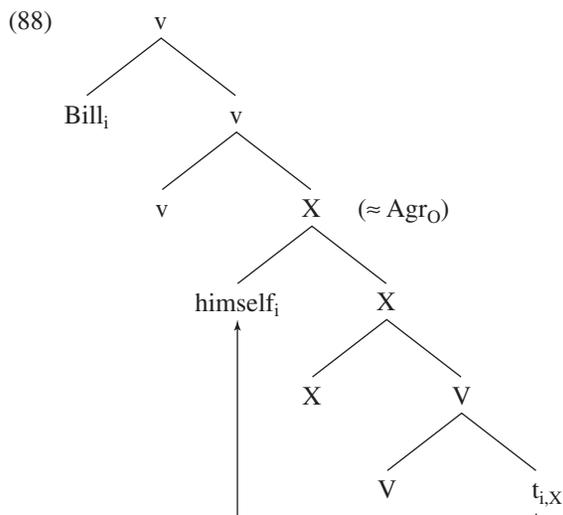
If the external argument is projected in Spec,v, as assumed here, then no violation is expected: the shifted object and the external argument share a numeration index, but not an address.

4.3 Clitic Movement

We have seen that object shift does not give rise to lethal ambiguity, because a shifted reflexive object does not undergo A-movement to Spec,v. However, if the object of a transitive clause could undergo A-movement to Spec,v, it should give rise to lethal ambiguity. This prediction seems to be confirmed by clitic movement.

As noted in section 1, dative reflexive clitics are ruled out in clauses with a derived subject. However, this is not the only restriction on reflexive clitics. Marantz (1984) argues that a reflexive clitic is never an ordinary object clitic: it must be generated as the external argument, while a lower argument raises to the subject position. I assume a modified version of Marantz's analysis for the grammatical reflexive clitic derivation: the reflexive clitic is merged without a Case feature, so a lower DP checks Case in Spec,T, where it binds the external argument (89).[36] Of course,

---

[36] If reflexive vP is a phase, then the lower argument must undergo an intermediate step of movement into Spec,v in order to escape the domain of the vP phase. Nevertheless, lethal ambiguity does not arise. It is possible that the procedure that links a moved argument with its copy does not target arguments lacking Case, perhaps because A-movement of phrases without Case is driven by different features (see footnote 7).

pronominal clitics generally cannot be merged without a Case feature; I assume that this possibility is available for reflexive clitics because they are featurally underspecified (Burzio 1991), a point to which we will return shortly.[37]

(89) a. Jean se   voit.
       John self sees
       'John sees himself.'

   b.
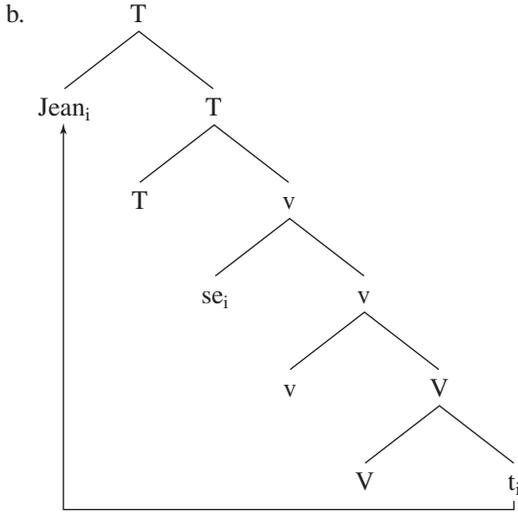
Reflexive clitic derivations resemble unaccusatives and passives in some respects, but differ in others (Reinhart 1997, Reinhart and Siloni 1999). Under the proposed analysis, clauses with a reflexive clitic resemble passives and unaccusatives in that they have a derived subject, but differ in that they have a syntactically projected external argument.

   Crosslinguistic evidence suggests that transitive derivations with a reflexive clitic differ systematically from those with a pronominal object clitic. One type of evidence comes from auxiliary selection (Perlmutter 1978, Burzio 1981, 1986, Rosen 1988). For example, the past tense in Italian transitive clauses is normally formed by combining the auxiliary *avere* 'have' with a past participle. This is true if the object is a pronominal clitic, as in (90a). However, with a reflexive clitic, the auxiliary *essere* 'be' is used (90b). Nonclitic reflexive objects do not trigger the use of *essere* in Italian (90c).

(90) a. Giovanni$_i$ la$_j$ ha accusata.
       Giovanni her has accused.FEM
       'Giovanni accused her.'
       (Burzio 1986:54)

---

[37] A similar derivation is available for impersonal clitics, which can also appear with a structural (nominative) Case feature (Cinque 1988, Dobrovie-Sorin 1998).

    b. Giovanni$_i$ si$_i$ è accusato.
       Giovanni self is accused
       'Giovanni accused himself.'
       (Burzio 1986:395)

    c. Giovanni$_i$ ha accusato se stesso$_i$.
       Giovanni has accused self
       'Giovanni accused himself.'
       (Burzio 1986:396)

The auxiliary *essere* is generally used in clauses with a derived subject, such as unaccusatives and passives. Thus, it is expected to be used with reflexives if the internal argument raises to subject position for nominative Case. However, a reviewer notes that auxiliary *essere* is also used with (nominative) impersonal *si* in Italian. According to Burzio (1991), impersonal *si* is featurally underspecified: it cannot antecede a third person pronoun. Thus, the distribution of *essere* and *avere* can be captured in terms of the featural specification of the external argument. If *avere* requires an external argument with a certain degree of featural specification, we may suppose that reflexive and impersonal external arguments are insufficiently specified to permit *avere*. Burzio argues that reflexives too are underspecified, given that, unlike third person arguments, they can be bound by an underspecified impersonal argument.[38]
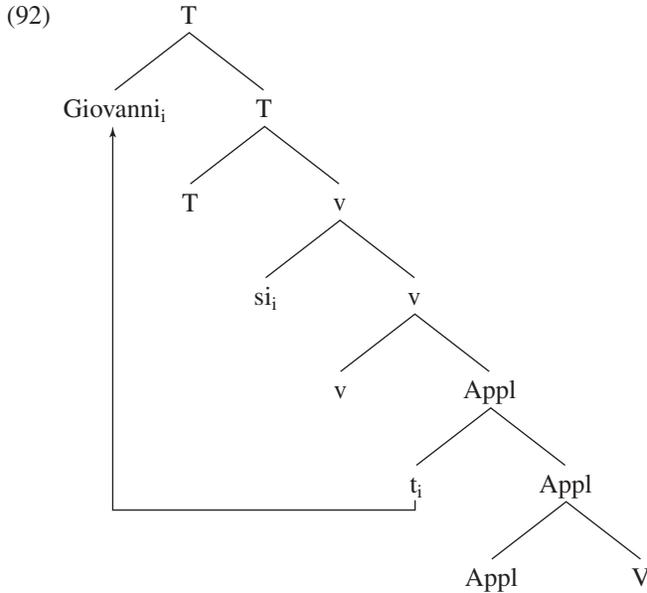
A question arises regarding the derivation of clauses with a dative reflexive clitic. An active clause with a dative internal argument, like (91a), has a counterpart with a reflexive clitic (91b). Again, auxiliary *essere* is used. This suggests that the reflexive clitic is the external argument, while the subject is derived.

(91) a. Giovanni ha scritto a se stesso.
       Giovanni has written to self
       'Giovanni wrote to himself.'
    b. Giovanni si è scritto.
       Giovanni self is written
       'Giovanni wrote to himself.'
       (Burzio 1986:416)

I propose that the derivation of (91b) is essentially as in (92). The applied argument is generated in the specifier of a high applicative, as proposed for Italian dative clitics in section 3.3.4.[39] From here, it raises to the subject position.

---

[38] Additional evidence for the underspecification of reflexive clitics is the ''spurious *se*'' phenomenon in Spanish (Bonet 1995, Halle and Marantz 1994). However, the proposed analysis must also treat first and second person reflexive clitics as underspecified, since they too trigger *essere*. Although these are not as underspecified as *se,* they are still morphologically ambiguous, in that they can be used for reflexives, unaccusatives, and inherent reflexives (Burzio 1986: 37).

[39] A dative argument that does not undergo clitic movement or movement to subject position may not be merged in this position. Some applied arguments are merged only if they can undergo movement (Marantz 1984, Rackowski 2002).

(92)

```
                    T
                  /   \
           Giovanni_i   T
              ↑        /  \
              |       T     v
              |            /  \
              |          si_i   v
              |               /   \
              |              v     Appl
              |                    /   \
              |_____ t_i    Appl
                                        /   \
                                    Appl     V
```

Evidence for the derivation in (92) comes from Italian past participle agreement. Such agreement is normally triggered by an accusative object clitic or by the derived subject of a passive or unaccusative. A dative pronominal clitic cannot trigger past participle agreement, perhaps because it has quirky Case (93a). However, a dative reflexive clause does show past participle agreement (93b). This is not expected if *si* is an ordinary dative clitic in (93b), but it is if this example has a derived subject, as in (92).

(93) a. Giovanni le   ha   comprato/*comprata un libro.
        Giovanni her.DAT has bought(*.FEM)   a   book
        'Giovanni has bought her a book.'
        (Burzio 1986:61)

     b. Maria si   è comprata   un libro.
        Maria self is bought.FEM a   book
        'Maria has bought herself a book.'
        (Burzio 1986:61)

However, Burzio (1986:413) notes that an applied argument cannot raise to the subject position of a passive clause.[40] An example is given in (94a), parallel to (93b). The passive in (94b) is acceptable: here, the direct object merges above the indirect object.

---

[40] Thanks to a reviewer for raising this issue.

(94) a. *Maria è stata   comprata   un libro.
         Maria is been.FEM bought.FEM a   book
         'Maria was bought a book.'

     b. È stato comprato un libro a   Maria.
         is been bought   a   book for Maria
         'Maria was bought a book.'

The ungrammaticality of (94a) is somewhat surprising under the proposed analysis.[41] One way to capture the distinction between passive and reflexive clauses is as follows. Suppose that a DP marked with quirky dative Case cannot check the EPP feature of T in Italian: T seeks an argument with unspecified (nonquirky) structural Case. Thus, Spec,Appl cannot raise to subject in the passive. In the reflexive clause, suppose that the reflexive external argument clitic can absorb dative case. Evidence for this is seen in Romanian (95), where clitics absorbing accusative case and dative case have different forms.[42] The argument in Spec,Appl can then raise to the subject position of the reflexive clause.

(95)

	1sg	2sg	1pl	2pl	3
Accusative	mă	te	ne	va	se
Dative	îmi	îţi	ne	va	îşi

(Mallinson 1986:310–311)

The observation that reflexive clitic derivations resemble passive and unaccusative derivations is not restricted to Italian; Marantz (1984) also assembles evidence from Albanian (Hubbard 1979), Dyirbal (Dixon 1972), French (Grimshaw 1982), Greenlandic (Sadock 1980), Icelandic

---

[41] Matters are more straightforward in Greek, where the indirect object can neither antecede the affixal anaphor *afto-* nor raise to the subject of the passive (Dimitra Papangeli, personal communication).

[42] Thanks to Gabriela Alboiu for drawing the Romanian facts to my attention. As a reviewer points out, the proposed analysis leaves unexplained a contrast with reduced relative clauses. Such clauses can contain a reflexive clitic (i), but not a dative one (ii).

(i) Un individuo [accusato*si* di aver assassinato il presidente] fu creduto pazzo.
    'An individual (who had) accused *himself* of having assassinated the president was deemed insane.'
    (Burzio 1986:413)

(ii) *Un individuo [scritto*si* parecchie volte . . .]
     'An individual (who had) written *to himself* several times . . . '
     (Burzio 1986:416)

Burzio (1986) argues that if (91b) involves movement of the applied argument to subject, such movement should also be available in (ii). However, (ii) is independently ruled out: unlike reduced relatives in Bulgarian (Iatridou, Anagnostopoulou, and Izvorski 2001:218), those in Italian cannot contain an external argument (Burzio 1986:194). The real puzzle is why (i) is possible. Burzio proposes that (i) has no syntactic external argument—in present terms, this reflexive clitic is not merged in Spec,v. Under this approach, the agentive interpretation of the clitic is licensed directly by the base verb, rather than by v. Marantz (1997) argues for a similar possibility in nominalizations that license an agentive possessor despite the absence of v, as in *the army's destruction of the city*. The results follow if only a reflexive clitic merged higher than the Appl head (in Spec,v) can absorb the dative case of the applied argument.

(Andrews 1982), Lardil (Klokeid 1976), and Russian. Many languages have a type of reflexive clause in which the verb appears in an unaccusative form, including Chicheŵa (Baker 1988b), Georgian (Nash 1995), Hebrew (Reinhart 1997, Reinhart and Siloni 1999), and Kannada (Lidz 1996). Baker (1996) uses incorporation and agreement in Mohawk to argue that a reflexive clitic is not an internal argument and that its antecedent is not the external argument.

As noted above, the object of a transitive clause should give rise to lethal ambiguity if it undergoes A-movement to Spec,v, leaving a copy with an unchecked Case feature. The surprising properties of reflexive clitics suggest that clitic movement is precisely the case in question. Suppose that an object clitic undergoes A-movement to Spec,v, as shown in (96). Since the external argument is merged in Spec,v, the two arguments have the same address. Here, they have different numeration indices, so the clitic can be unambiguously linked with its base copy. However, if the object clitic is reflexive, it will acquire the numeration index of the external argument, and lethal ambiguity will arise. Similar results are predicted for dative reflexive clitics if they undergo A-movement from Spec,Appl to Spec,v.

(96) a. Jean   le   voit.
      John   him   sees
      'John sees him.'

   b.
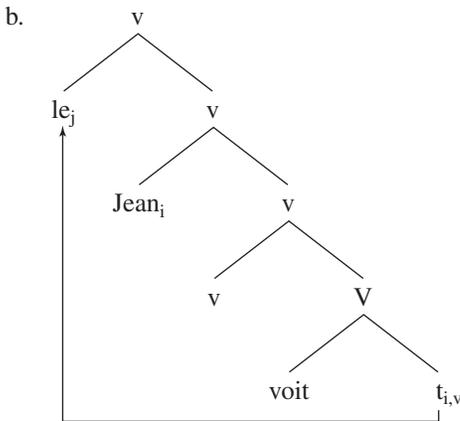
Suppose that a reflexive object clitic is not bound by the external argument. In this case, the two arguments will not have the same numeration index, and lethal ambiguity will not arise. On the other hand, if the reflexive clitic is not bound, the derivation will violate the binding principles. Moreover, long-distance binding of a reflexive clitic seems to be ruled out. For example, in (97), from French, the reflexive clitic in the embedded clause is c-commanded both by the subject of the matrix clause and by the subject of the embedded clause—the copy of the accusative clitic *le* (> *l'*). However, only the embedded subject is in the binding domain of the anaphor. If it binds the reflexive clitic at LF, the derivation is grammatical; if only the higher subject binds the reflexive, Principle A is violated.

(97) Marie$_i$ l_j'a   fait   [t$_j$ se$_{j/*i}$ détester].
     Marie him-has made   self   hate
     'Marie$_i$ made him$_j$ hate himself$_j$/*her$_i$.'
     (Marie-Claude Boivin, personal communication)

Richards (1997a) argues that subject orientation and local binding can be attributed to the underspecification of two different kinds of features in anaphors. His analysis is based on competition effects between anaphors and pronouns, and among different types of anaphors. If Richards's analysis is correct, then the fact that reflexive clitics are locally bound and subject oriented supports the claim that they are featurally underspecified.[43] Under this view, Principle A and the ban against lethal ambiguity combine to rule out reflexive object clitics. A reflexive clitic yields a grammatical derivation only when it merges as a Caseless external argument.[44]

Unlike clitics, however, full DP objects normally do not undergo A-movement to Spec,v. According to Chomsky (2001), an EPP feature can be freely added to allow movement to the phase edge. However, other considerations may rule out derivations in which this EPP feature is added. For example, Chomsky argues that overt object shift to Spec,v in a transitive clause is generally impossible because the shifted object would block the probe T from establishing an Agree relation with the external argument. However, the object checks Case on v, so it cannot itself check the EPP feature on T, and the derivation crashes. Object shift is therefore possible only when the shifted object can move to a position inaccessible to T. For example, Chomsky argues that a shifted object in Scandinavian languages undergoes phonological movement to a position inaccessible to T. Similarly, if a shifted object undergoes syntactic cliticization to T, we can assume it is inaccessible to further Agree operations with T.

5 Conclusion

I have argued here that an A-moved argument must be unambiguously linked with its copy at LF, using only its *address* (its sister) and its numeration index. If another argument has the same index and address, lethal ambiguity will arise: the copy cannot be linked with its antecedent and the derivation crashes. This analysis accounts for restrictions on the distribution of clitic and full DP reflexives. It also accommodates a range of exceptions to these restrictions, including Ā-movement and arguments marked with inherent Case. The range of facts captured here poses a challenge for alternative views of argument interpretation.

References

Andrews, Avery. 1982. The representation of case in Modern Icelandic. In *The mental representation of grammatical relations,* ed. by Joan Bresnan, 427–503. Cambridge, Mass.: MIT Press.

[43] For some reason, not all local subject-oriented anaphors can occur without Case. However, if only highly underspecified anaphors lack Case, as proposed here, then all Caseless anaphors should be local and subject oriented.

[44] The external argument generalization cannot be entirely derived from the lethal ambiguity analysis. It is not clear why Caseless reflexive clitics must be external arguments. See Dobrovie-Sorin 1998 for a similar restriction on Caseless impersonal clitics, which absorb accusative morphological case.

Aronson, Howard I. 1990. *Georgian: A reading grammar.* Corrected edition. Columbus, Ohio: Slavica.

Baker, Mark C. 1988a. *Incorporation: A theory of grammatical function changing.* Chicago: University of Chicago Press.

Baker, Mark C. 1988b. Theta theory and the syntax of applicatives in Chicheŵa. *Natural Language & Linguistic Theory* 6:353–389.

Baker, Mark C. 1996. *The polysynthesis parameter.* New York: Oxford University Press.

Barss, Andrew, and Howard Lasnik. 1986. A note on anaphora and double objects. *Linguistic Inquiry* 17: 219–251.

Boeckx, Cedric. 2001. Scope reconstruction and A-movement. *Natural Language & Linguistic Theory* 19: 514–548.

Bonet, Eulàlia. 1995. Feature structure of Romance clitics. *Natural Language & Linguistic Theory* 13: 607–647.

Branigan, Philip. 1992. Subjects and complementizers. Doctoral dissertation, MIT, Cambridge, Mass.

Bresnan, Joan, and Lioba Moshi. 1990. Object asymmetries in comparative Bantu syntax. *Linguistic Inquiry* 21:147–185.

Burzio, Luigi. 1981. Intransitive verbs and Italian auxiliaries. Doctoral dissertation, MIT, Cambridge, Mass.

Burzio, Luigi. 1986. *Italian syntax: A government-binding approach.* Dordrecht: Kluwer.

Burzio, Luigi. 1991. The morphological basis of anaphora. *Journal of Linguistics* 27:81–105.

Chomsky, Noam. 1995. *The Minimalist Program.* Cambridge, Mass.: MIT Press.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik,* ed. by Roger Martin, David Michaels, and Juan Uriagereka, 89–155. Cambridge, Mass.: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language,* ed. by Michael Kenstowicz, 1–52. Cambridge, Mass.: MIT Press.

Cinque, Guglielmo. 1988. On *si* constructions and the theory of *arb. Linguistic Inquiry* 19:521–581.

Cuervo, María Cristina. 2003. Datives at large. Doctoral dissertation, MIT, Cambridge, Mass.

Dikken, Marcel den, and René Mulder. 1991. Double object scrambling. In *Papers from the 3rd Student Conference in Linguistics,* ed. by Jonathan David Bobaljik and Tony Bures, 67–82. MIT Working Papers in Linguistics 14. Cambridge, Mass.: MIT, Department of Linguistics and Philosophy, MITWPL.

Dixon, Robert M. W. 1972. *The Dyirbal language of North Queensland.* Cambridge: Cambridge University Press.

Dobrovie-Sorin, Carmen. 1998. Impersonal *se* constructions in Romance and the passivization of unergatives. *Linguistic Inquiry* 29:399–437.

Embick, David. 1997. Voice and the interfaces of syntax. Doctoral dissertation, University of Pennsylvania, Philadelphia.

Everaert, Martin, and Elena Anagnostopoulou. 1997. Thematic hierarchies and binding theory: Evidence from Modern Greek. In *Empirical issues in formal syntax and semantics: Selected papers from the Colloque de Syntaxe et de Sémantique de Paris (CSSP 1995),* ed. by Francis Corblin, Danièle Godard, and Jean-Marie Marandin, 43–59. Bern: Peter Lang.

Fox, Danny. 2000. *Economy and semantic interpretation.* Cambridge, Mass.: MIT Press.

Frank, Robert, Young-Suk Lee, and Owen Rambow. 1996. Scrambling, reconstruction and subject binding. *Rivista di Grammatica Generativa* 21:67–106.

Grimshaw, Jane. 1982. On the lexical representation of Romance reflexive clitics. In *The mental representation of grammatical relations,* ed. by Joan Bresnan, 87–148. Cambridge, Mass.: MIT Press.

Hale, Kenneth, and Samuel Jay Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In *The view from Building 20: Essays on linguistics in honor of Sylvain Bromberger,* ed. by Kenneth Hale and Samuel Jay Keyser, 53–109. Cambridge, Mass.: MIT Press.

Halle, Morris, and Alec Marantz. 1994. Some key features of Distributed Morphology. In *Papers on phonology and morphology,* ed. by Andrew Carnie and Heidi Harley, 275–288. MIT Working Papers in Linguistics 21. Cambridge, Mass.: MIT, Department of Linguistics and Philosophy, MITWPL.

Harley, Heidi. 1995. Subjects, events, and licensing. Doctoral dissertation, MIT, Cambridge, Mass.

Harris, Alice. 1981. *Georgian syntax: A study in Relational Grammar.* Cambridge: Cambridge University Press.

Hiraiwa, Ken. 2002. EPP: Object shift and stylistic fronting in Scandinavian. In *WCCFL 20: Proceedings of the 20th West Coast Conference on Formal Linguistics,* ed. by Karine Megerdoomian and Leora A. Bar-el, 290–303. Somerville, Mass.: Cascadilla Press.

Holmberg, Anders, and Christer Platzack. 1995. *The role of inflection in Scandinavian syntax.* New York: Oxford University Press.

Hubbard, Philip L. 1979. Albanian Neapolitan morphology. In *Linguistic notes from La Jolla 6,* ed. by Philip L. Hubbard and Peter M. Tiersma, 55–86. La Jolla: University of California, San Diego.

Iatridou, Sabine, Elena Anagnostopoulou, and Roumyana Izvorski. 2001. Observations about the form and meaning of the perfect. In *Ken Hale: A life in language,* ed. by Michael Kenstowicz, 189–238. Cambridge, Mass.: MIT Press.

Kayne, Richard. 1975. *French syntax.* Cambridge, Mass.: MIT Press.

Kayne, Richard. 1988. Romance *se/si.* Paper presented at the GLOW Colloquium, Budapest. *GLOW Newsletter* 20.

Klokeid, Terry J. 1976. Topics in Lardil grammar. Doctoral dissertation, MIT, Cambridge, Mass.

Koizumi, Masatoshi. 1993. Object agreement phrases and the split VP hypothesis. In *Papers on Case and agreement I,* ed. by Jonathan David Bobaljik and Colin Phillips, 99–148. MIT Working Papers in Linguistics 18. Cambridge, Mass.: MIT, Department of Linguistics and Philosophy, MITWPL.

Koizumi, Masatoshi. 1995. Phrase structure in minimalist syntax. Doctoral dissertation, MIT, Cambridge, Mass.

Koster, Jan. 1978. *Locality principles in syntax.* Dordrecht: Foris.

Kuno, Susumu. 1973. *The structure of the Japanese language.* Cambridge, Mass.: MIT Press.

Lasnik, Howard. 1976. Remarks on coreference. *Linguistic Analysis* 2:1–22. Reprinted in Howard Lasnik, *Essays on anaphora,* 90–109. Dordrecht: Kluwer (1989).

Lasnik, Howard. 1995. A note on pseudogapping. In *Papers on minimalist syntax,* ed. by Rob Pensalfini and Hiroyuki Ura, 143–163. MIT Working Papers in Linguistics 27. Cambridge, Mass.: MIT, Department of Linguistics and Philosophy, MITWPL. Reprinted in Howard Lasnik, *Minimalist analysis,* 151–174. Malden, Mass.: Blackwell (1999).

Lasnik, Howard. 1999. Chains of arguments. In *Working minimalism,* ed. by Samuel David Epstein and Norbert Hornstein, 189–215. Cambridge, Mass.: MIT Press.

Lasnik, Howard, and Mamoru Saito. 1991. On the subject of infinitives. In *CLS 27,* ed. by Lise M. Dobrin, Lynn Nichols, and Rosa M. Rodriguez, 324–343. Chicago: University of Chicago, Chicago Linguistic Society. Reprinted in Howard Lasnik, *Minimalist analysis,* 7–24. Malden, Mass.: Blackwell (1999).

Lebeaux, David. 1990. Relative clauses, licensing, and the nature of the derivation. In *Proceedings of NELS 20,* ed. by Juli Carter, Rose-Marie Déchaine, Bill Philip, and Tim Sherer, 318–332. Amherst: University of Massachusetts, GLSA.

Legate, Julie Anne. 2003a. Identifying phases. Paper presented at the IAP Workshop on EPP and Phases, MIT, Cambridge, Mass., January 16–17.

Legate, Julie Anne. 2003b. Some interface properties of the phase. *Linguistic Inquiry* 34:506–516.

Lidz, Jeffrey Lee. 1996. Dimensions of reflexivity. Doctoral dissertation, University of Delaware, Newark.

Mahajan, Anoop Kumar. 1990. The A/A-bar distinction and movement theory. Doctoral dissertation, MIT, Cambridge, Mass.

Mallinson, Graham. 1986. *Rumanian.* London: Croom Helm.

Manzini, Maria Rita. 1992. *Locality: A theory and some empirical consequences.* Cambridge, Mass.: MIT Press.

Marantz, Alec. 1984. *On the nature of grammatical relations.* Cambridge, Mass.: MIT Press.

Marantz, Alec. 1991. Case and licensing. In *ESCOL '91: Proceedings of the Eighth Eastern States Conference on Linguistics,* ed. by Germán F. Westphal, Benjamin Ao, and Hee-Rahk Chae, 234–253. Columbus: Ohio State University, Department of Linguistics. Reprinted in *Arguments and Case: Explaining Burzio's Generalization,* ed. by Eric Reuland, 11–30. Amsterdam: John Benjamins.

Marantz, Alec. 1993. Implications of asymmetries in double object constructions. In *Theoretical aspects of Bantu grammar,* ed. by Sam Mchombo, 113–151. Stanford, Calif.: CSLI Publications.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In *Proceedings of the 21st Annual Penn Linguistics Colloquium,* ed. by Alexis Dimitriadis, Laura Siegel, Clarissa Surek-Clark, and Alexander Williams, 201–225. Penn Working Papers in Linguistics 4.2. Philadelphia: University of Pennsylvania, Penn Linguistics Club.

Massey, Victoria Walker. 1990. Experiencers, themes, and c-command in Albanian. In *Papers of the Student Conference in Linguistics,* ed. by Thomas Green and Sigal Uziel, 128–143. MIT Working Papers in Linguistics 12. Cambridge, Mass.: MIT, Department of Linguistics and Philosophy, MITWPL.

Massey, Victoria Walker. 1992. Compositionality and constituency in Albanian. Doctoral dissertation, University of North Carolina, Chapel Hill. Available as MIT Occasional Papers in Linguistics 3. Cambridge, Mass.: MIT, Department of Linguistics and Philosophy, MITWPL.

McGinnis, Martha. 1995. Projection and position: Evidence from Georgian. In *Proceedings of ConSole IV,* ed. by João Costa, Rob Goedemans, and Reuben van der Vijver, 203–220. Leiden: HIL.

McGinnis, Martha. 1998. Locality in A-movement. Doctoral dissertation, MIT, Cambridge, Mass.

McGinnis, Martha. 2000. Phases and the syntax of applicatives. In *NELS 31,* ed. by Min-Joo Kim and Uri Strauss, 333–349. Amherst: University of Massachusetts, GLSA.

McGinnis, Martha. 2001. Variation in the phase structure of applicatives. In *Linguistic variation yearbook 1,* ed. by Pierre Pica and Johan Rooryck, 101–142. Amsterdam: John Benjamins.

Miyagawa, Shigeru. 1997. Against optional scrambling. *Linguistic Inquiry* 28:1–25.

Miyagawa, Shigeru. 2001. The EPP, scrambling, and *wh*-in-situ. In *Ken Hale: A life in language,* ed. by Michael Kenstowicz, 293–338. Cambridge, Mass.: MIT Press.

Miyagawa, Shigeru, and Takae Tsujioka. 2003. High and low goals and word order in Japanese. Ms., MIT, Cambridge, Mass., and Georgetown University, Washington, D.C.

Nash, Léa. 1995. Portée argumentale et marquage casuel dans les langues SOV et dans les langues ergatives: L'exemple du géorgien. Doctoral dissertation, Université de Paris 8.

Nissenbaum, Jon. 2000. Investigations of covert phrasal movement. Doctoral dissertation, MIT, Cambridge, Mass.

Perlmutter, David. 1978. The unaccusative hypothesis and multiattachment: Italian evidence. Paper presented at the Harvard Linguistics Circle, May 9, 1978.

Pesetsky, David. 1995. *Zero syntax: Experiencers and cascades.* Cambridge, Mass.: MIT Press.

Phillips, Colin. 1996. Order and structure. Doctoral dissertation, MIT, Cambridge, Mass.

Postal, Paul M. 1971. *Cross-over phenomena.* New York: Holt, Rinehart and Winston.

Postal, Paul M. 1974. *On raising: One rule of English grammar and its theoretical implications.* Cambridge, Mass.: MIT Press.

Pylkkänen, Liina. 2001. What applicative heads apply to. In *Proceedings of the 24th Annual Penn Linguistics Colloquium,* ed. by Michelle Minnick Fox, Alexander Williams, and Elsi Kaiser, 197–210. Penn Working Papers in Linguistics 7.1. Philadelphia: University of Pennsylvania, Penn Linguistics Club.

Pylkkänen, Liina. 2002. Introducing arguments. Doctoral dissertation, MIT, Cambridge, Mass.

Rackowski, Andrea. 2002. The structure of Tagalog: Specificity, voice and the distribution of arguments. Doctoral dissertation, MIT, Cambridge, Mass.

Reinhart, Tanya. 1997. Syntactic effects of lexical operations: Reflexives and unaccusatives. UiL OTS Working Papers of Theoretical Linguistics 97-002. Utrecht: Utrecht University, Utrecht Institute of Linguistics.

Reinhart, Tanya, and Tal Siloni. 1999. Against the unaccusative analysis of reflexives. Ms., Tel Aviv University. To appear in *The unaccusativity puzzle: Studies on the syntax-lexicon interface,* ed. by Artemis Alexiadou, Elena Anagnostopoulou, and Martin Everaert. Oxford: Oxford University Press.

Richards, Norvin. 1997a. Competition and disjoint reference. *Linguistic Inquiry* 28:178–187.

Richards, Norvin. 1997b. What moves where when in which language? Doctoral dissertation, MIT, Cambridge, Mass.

Richards, Norvin. 2001. *Movement in language: Interactions and architectures.* New York: Oxford University Press.

Rizzi, Luigi. 1986. On chain formation. In *The syntax of pronominal clitics: Syntax and semantics 19,* ed. by Hagit Borer, 65–95. New York: Academic Press.

Rizzi, Luigi. 1990. *Relativized Minimality.* Cambridge, Mass.: MIT Press.

Rosen, Carol. 1988. *The relational structure of reflexive clauses: Evidence from Italian.* New York: Garland.

Sadock, Jerrold M. 1980. Noun incorporation in Greenlandic. *Language* 56:812–826.

Sauerland, Uli. 2003. Intermediate adjunction with A-movement. *Linguistic Inquiry* 34:308–314.

Seidl, Amanda. 2001. *Minimal indirect reference: A theory of the syntax-phonology interface.* New York: Routledge.

Snyder, William. 1992. Chain-formation and crossover. Ms., MIT, Cambridge, Mass.

Ura, Hiroyuki. 1996. Multiple feature-checking: A theory of grammatical function-splitting. Doctoral dissertation, MIT, Cambridge, Mass.

Wasow, Thomas. 1972. Anaphoric relations in English. Doctoral dissertation, MIT, Cambridge, Mass.

Webelhuth, Gert. 1989. Syntactic saturation phenomena and the modern Germanic languages. Doctoral dissertation, University of Massachusetts, Amherst.

Woolford, Ellen. 1993. Symmetric and asymmetric passives. *Natural Language & Linguistic Theory* 11:679–728.

Woolford, Ellen. 1999. More on the anaphor-agreement effect. *Linguistic Inquiry* 30:257–287.

Yatsushiro, Kazuko. 1998. Structure within VP in Japanese. In *Japanese/Korean linguistics 8,* ed. by David James Silva, 501–514. Stanford, Calif.: CSLI Publications.

Linguistics Department
University of Calgary
2500 University Drive N.W.
Calgary, Alberta T2N 1N4
Canada

mcginnis@ucalgary.ca