On Verb Movement
in the *Labeling Algorithm*-Based Derivation[*]

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Abstract

In this paper, I discuss verb movement in the *Labeling Algorithm*-based derivational system (Chomsky 2013, 2014). I point out that in this system, movement operations that do not produce a new semantic effect, including verb movement, freely occur in syntax, contra Chomsky (2001). I argue that since valuation (or *Agree*, Chomsky 2001) between the tense feature and a verbal head does not require any movement or any morphological support, verb movement, in the unmarked case, does not occur. Languages including, e.g. English, do not have verb movement and have a relatively poor inflectional system. Languages including, e.g. French and V2 languages, have verb movement either to T or to C and a relatively rich inflectional system. I suggest that the tense feature of the former languages is strong, whereas the latter languages have a weak tense feature and need verb movement and much morphological support to strengthen it. That is, the facts on verb movement are interpreted in the way opposite to the traditional claim represented by Chomsky (1995).[1]

1.   Verb Movement in the *Phase-Cartographic* Framework

The finite verb appears in different positions in different languages. The finite verb *kisses* follows the adverb *always* in English (1a). *Embrasse* 'kisses' moves

[1] Throughout this paper, I assume that the reader is familiar with the theoretical development from Chomsky (2000) and onwards.

and precedes *toujours* 'always' in French (1b). *Kysser* 'kisses' moves not only across *alltid* 'always' but also across the subject *Jon* in Swedish (1c). These facts indicate that the finite verb is located in the v*P domain in languages such as English (referred to as type (1a) languages), in the TP domain in languages such as French (referred to as type (1b) languages), and in the CP domain in V2 languages such as Swedish (referred to as type (1c) languages).[2]

(1) a. [$_{TP}$ John (*kisses) always [$_{VP}$ (^{OK}kisses) Mary]].[3]   [Eng.]

    b. [$_{TP}$ Jean (^{OK}embrasse) toujours [$_{VP}$ (*embrasse) Marie]].   [Fre.]
        Jean   kisses   always   kisses   Marie
        'Jean always kisses Marie.'

    c. [$_{CP}$ Marit (^{OK}kysser) [$_{TP}$ Jon (*kysser) alltid[$_{VP}$ (*kysser) ~~Marit~~]]]. [Swe.]
        Marit   kisses   Jon   kisses always   kisses
        'Marit, Jon always kisses her.'

Verb movement does not affect the semantic interpretation as illustrated above. This fact has long been an argument against the claim that verb movement occurs in syntax. Since the *phase* framework was proposed (Chomsky 2000, 2001, 2004, 2008), it has been assumed that the computation of every human language proceeds in a uniform way in narrow syntax and the semantic component (the *Uniformity Principle*, Chomsky 2001). This assumption has been tied up with the claim made in the *cartographic* system (Rizzi 1997, Cinque 1999), where the position in which a category is located in narrow

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[2] For traditional issues and discussions on verb movement, see, e.g. Emonds 1978, Travis 1984, Pollock 1989, Belletti 1990, Vikner 1990, Roberts 1993, Svenonius 1994, Chomsky 1995, Holmberg and Platzack 1995, Grimshaw 2000, Matushansky 2006, Truckenbrodt 2006, among others.

[3] In the current assumption since Chomsky (2001), all clauses universally have C, which I turn to in detail below.

syntax corresponds to, and must correspond to, the interpretation that the category receives in the semantic component in all languages. Thus, a category that is located, e.g. in [Spec,FocP], in narrow syntax is, and must be, interpreted as focus in the semantic component in all languages, and vice versa.

According to Chomsky (2001), syntactic movement occurs when a semantic difference is reflected on the interface. The *Extended Projection Principle* (EPP) – originally, the requirement that a category should be located in the Spec of a functional head (Chomsky 1981, 1986) – is, in the phase-cartographic system, referred to as a feature that is assigned to a functional head and triggers movement. Since C carries the EPP, the object *Marit* in (1c) moves to sentence-initial position and receives the focal (or topical) interpretation that it could not receive in its original position. The main verb *kysser* 'kisses' also moves to C in (1c). But the verb is not interpreted differently in C than in v* (1a) or in T (1b). Chomsky (2001:37-38) argues that movement operations that do not cause any semantic change, such as verb movement, occur in the phonological component.

2. The Procedures of *Labeling Algorithm* and the Derivation of Verb Movement

Chomsky (2013, 2014) proposes the following procedures of *Labeling Algorithm* LA:[4]

(2) a. In the configuration [H, XP], with H being a phasal head, LA takes H as the label;
     b. In the configuration [XP, YP], either procedure 1 or 2 is chosen:

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[4] Throughout this paper, I use the term *Labeling Algorithm* LA for an abstract syntactic mechanism, and the term *labeling* for a specific syntactic operation.

1. Either XP or YP moves out; LA takes the head of the phrasal object that does not move out as the label;

2. XP and YP agree in some feature; LA takes that shared feature as the label;

c. In the configuration [H, XP] with H being a non-phasal head, i.e. V/R(oot) or T,

   i) The subject in [Spec,XP] moves to [Spec, H] and strengthens the non-phasal head;

   ii) That raised subject and the non-phasal head agree in some feature; LA takes that shared feature as the label.

Following Borer (2005a,b, 2013), Chomsky (2013, 2014) assumes that any category (noun, verb, etc.) is created by merge of a root and a functional head. For instance, V/R(oot) in (2c) merges to v* to be a verbal category. I follow this claim in this paper. Chomsky (2014:5-6) further argues that the non-phasal heads, V/R(oot) and T, are weak and cannot be labels by themselves; they must be strengthened by the movement of the subject in the Spec of their complement, as described in (2ci). This requirement of the subject movement is referred to as the EPP. The procedures of (2b2) and (2cii) describe the syntactic operation called *Agree*, i.e. valuation (Chomsky 2000, 2001, 2004, 2008): unvalued features of one are valued by the other so that the former can be interpreted at the interface with the other grammatical components. When a label is determined by Agree, LA seeks the feature shared by XP and YP in (2b2) and the feature shared by a non-phasal head and a subject raised to its Spec in (2cii). Conventionally, LA takes, as the label, the verbal/functional head, either X or Y, in (2b2) and the non-phasal head in (2cii).[5]

On the basis of the procedures above, the derivations of v*P and CP phases are described in (3i-viii). (3a) and (3b) illustrate the final representations

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[5] In both configurations [H,XP] and [XP,YP], Agree occurs between two heads, H and X in the former and X and Y in the latter. See the series of Chomsky's papers referred to above.

of the derivations. I follow the procedure described in Chomsky (2014:11,(8)), which is carried out in more a successive-cyclic manner than the procedure described in Chomsky (2014:8,(5)).

(3) a. R+~~v*~~ [$_\alpha$ DP [R [$_\beta$ ~~DP~~ …]]]   (= v*P phase)

 b. ~~C~~ [$_\alpha$ DP [T [$_\beta$ ~~DP~~ …]]]   (= CP phase)

i) DP in [Spec,β] moves to [Spec,R] in (3a) and to [Spec,T] in (3b) to strengthen those non-phasal heads;
ii) v* and C merge to its complement, α, in (3a) and (3b) respectively;
iii) Phasehood is inherited from v* to R in (3a) and from C to T in (3b);
iv) DP Obj(ect)-agrees with R in (3a); DP Subj(ect)-agrees with T in (3b);[6]
v) α is labeled RP in (3a) and TP in (3b);
vi) R moves to v*, and v*, the verbal affix, is deleted in (3a); C is simply deleted in (3b);
vii) Phasehood is activated in the original position of R in (3a) and in that of T in (3b);
viii) β, the complement of R in (3a) and that of T in (3b), is transferred.[7]

A theoretical consequence of the LA-based derivational system is that movement operations that do not produce a new semantic effect can freely occur in syntax for any kind of categories, contra Chomsky (2001). As stated in

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[6] In this Agree operation, unvalued φ-features of R/T are valued by DP. An unvalued Case feature of DP is also valued by the head and assigned the Accusative Case in (3a) and the Nominative Case in (3b).

[7] Christer Platzack (p.c.) addresses the question whether v*, a transitive head, should be distinguished from v, an intransitive/unaccusative head, in this new framework. The answer seems to be yes. By assumption, V/R(oot) needs some category in its Spec to strengthen it. An unaccusative verb takes, but an intransitive verb does not take, an internal argument (Burzio 1986). Though an unaccusative R can strengthen itself by raising its argument, an intransitive R cannot do so. The former can label itself after Agree with the raised argument, whereas the latter cannot label itself due to the absence of Agree with any argument. Thus, v as either intransitive or unaccusative can not always label itself, whereas v* as transitive can always do so, which enables the latter to be a phasal head.

the previous section, it has long been assumed that syntactic movement occurs when it causes a semantic change. However, in the configuration [XP,YP], either one of the categories moves regardless of whether it obtains a new semantic effect in the moved position; see (2b1). In the configuration [H, XP] with a non-phasal head, the subject in [Spec,XP] moves to [Spec,H]; see (2ci). This movement does not always produce a special semantic effect such as focus and topic for the raised subject. Hence, it is not necessary to assume in the LA-based derivational system that movement operations that do not cause a semantic change, including verb movement, occur in the phonological component.[8] See, e.g. Svenonius (1994), Matushansky (2006), Truckenbrodt (2006) and Biberauer and Roberts (2008), for the argument that verb movement should occur in syntax.[9]

According to Chomsky (2014:8), all functional features (such as φ-features, tense and an interrogative feature, if any) are located in C, not in T. It is plausible that such features are universally located in C, since C is a clausal head in all languages. In process (3iii), functional features are inherited from C to T. Let us assume that both φ-features and the tense feature are inherited from C to T in type (1a-b) languages as illustrated in (4a), whereas only φ-features are inherited from C to T and the tense feature stays in C in type (1c) languages as illustrated in (4b).[10] The claim here is in line with Holmberg and Platzack

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[8] Johan Brandtler (p.c.) questions under what conditions movement that is not semantically motivated sometimes occurs in syntax and occurs in the phonological component in others. The claim here is in fact that as long as movement can occur in syntax, it should occur in it and should not be postponed to the phonological component. Thus, there should be no movement operations that occur in syntax in some cases but occur in the phonological component in others.

[9] In Chomsky (2014:11), it is claimed that R-to-v* occurs in narrow syntax, whereas T-to-C occurs in the phonological component.

[10] No problem arises in claiming that only some of the features of a phasal head are inherited to a lower head, leaving the others in the original head position. See Obata and Epstein (2012), who argue that features of a category can be splitted and appear in different syntactic

(1995), who propose that the finiteness feature is located in C in V2 languages, whereas it is located in T in non-V2 languages.

(4) a. $[C_{[\sout{T},\phi]} [T_{[T,\phi]} [R+v*[\sout{R}]]]]$[11]

  b. $[C_{[T,\sout{\phi}]} [T_{[\phi]} [R+v*[\sout{R}]]]]$

The tense value of a verbal head is determined by T. Hence, it is plausible that v* has an unvalued tense feature, whereas T has a valued tense feature.[12] When the tense feature (as well as φ-features) is inherited to T in (4a), T and R+v* simply agree as in type (1a) languages; see (5a). In some languages such as type (1b) languages, T requires the R+v* amalgam to move to itself, which results in (5b).[13] In type (1c) languages in which the tense feature stays in C (see (4b)), T does not have any tense feature that agrees with v*. The valued tense feature in C then agrees with the unvalued counterpart of v*. As a phasal head, v* can access further syntactic operations that occur at the next higher phasal level. Following the claim made in recent literature, e.g. Holmberg and Hróarsdóttir (2003) and Chomsky (2008), let us assume that C directly raises the R+v* amalgam in the v* head to itself after Agree with v*, which results in (5c).

positions. Johan Brandtler (p.c.) addresses the question how to decide which functional features are inherited from C to T in a given language. This point concerns tightening the mechanism of feature inheritance, which I leave for future research.

[11] At the derivational point when functional features are inherited from C to T, v* would have been already deleted, since the derivation of CP follows that of v*P. Throughout this paper, I notate the verbal head amalgam as R+v* without a deletion line on v* for convenience' sake.

[12] Biberauer and Roberts (2008) assume valued/unvalued V-features in addition to valued/unvalued Tense features. I do not assume V-features for Agree between T and R+v*, since there is no reason to assume them. Traditionally, it has been assumed that a functional head has unvalued features and a category has valued features; the former is valued by the latter. But see, e.g. Pesetsky and Torrego (2001), who claim that the unvalued Case of a subject is valued by T. The point now is that in Agree, one has unvalued features and the other has valued features, as stated by Chomsky (2014:10,ft.16).

[13] The reason why T needs to raise the R+v* amalgam is mentioned later.

(5)   a.   C$_{[T,φ]}$ [$_{TP}$ DP T$_{[T,φ]}$ [$_{v*P}$ ~~DP~~ R(kisses)+v* ⋯ [~~R(kisses)~~ …]]]]
        (=1a)

   b.   C$_{[T,φ]}$ [$_{TP}$ DP [R(embrasse)+v*+T$_{[T,φ]}$ [$_{v*P}$ ~~DP R(embrasse)+v*~~
        … [~~R(embrasse)~~ …]]]]   (=1b)

   c.   … R(kysser)+v*+C$_{[T,φ]}$ [$_{TP}$ DP [T$_{[φ]}$ [$_{v*P}$ ~~DP R(kysser)+v*~~
        … [~~R(kysser)~~ …]]]]   (=1c)

See Wiklund et al. (2007), who argue that verb movement in main clauses of Icelandic, a V2 language, directly targets the CP domain and does not display v*-to-T movement, which is in line with the proposal of the derivation illustrated in (5c).[14] Biberauer and Roberts (2008) assume the v*-to-T step for verb movement to C. They do not (or cannot) refer to that process in detail. With the direct movement analysis here, everything falls into place: there is no v*-to-T in type (1c) languages.[15]

Why is the raising of a verbal head amalgam either to T or to C obligatory in some languages? As has been claimed since Chomsky (2001), Agree occurs between a head and its goal, the latter staying in situ. Agree, i.e. valuation, does not require the movement of the goal. In the same way, R+v* should remain in situ after Agree with T in the unmarked case. Thus, it is type (1a) languages in which verb movement does not occur that represent the unmarked case. Type (1b-c) languages require verb movement in addition to valuation. Following Chomsky's argument concerning the weakness of

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[14] Their analysis is based on *Remnant Movement* originated in Besten and Webelhuth (1987).

[15] v*-to-T is, but v*-to-C will not be, countercyclic, which details I leave aside here. See Richards (2001) for the 'tucking-in' operation, which has been widely assumed in the literature, including Chomsky (2013, 2014). See Epstein et al. (2012) for a theoretical discussion from the standpoint that the *Extension Condition* (Chomsky 1995) should be strictly obeyed.

non-phasal heads described in section 2, the tense feature in type (1a) languages is strong, since they do not require verb movement to strengthen it. The tense feature of type (1b-c) languages, on the other hand, is weak, since they require verb movement to strengthen it.

In the LA-based derivation, verb movement is a subclass of all kinds of movement operations. A phrase either simply moves out as in (2b1) or moves to strengthen a weak non-phasal head as in (2ci). In contrast, a verbal head moves to strengthen a weak tense feature in C/T only. The difference between phrasal movement and verb movement is that the former is, but the latter is not, involved in labeling. That is, when a phrase moves, LA takes the head of a remaining phrasal object as the label, as spelled out in (2b1). A phrase also moves so that it can agree with some feature of a non-phasal head; LA then takes that shared feature as the label, as spelled out in (2cii). Verb movement, however, is irrelevant to labeling operations, as illustrated in (5b-c).

Based on the claim that both φ-features and the tense feature are inherited to T in type (1b) languages, whereas only φ-features are inherited to T in type (1c) languages, it is predicted that the former languages have a morphologically richer inflectional system than the latter languages: both φ-features and the tense feature should be realized in the verbal head located in T in the former. This prediction is confirmed by many traditional observations, e.g. Vikner (1990), Roberts (1993), Holmberg and Platzack (1995): the Romance languages, which represent type (1b) languages, have a richer inflectional system than the Germanic languages, which represent type (1c) languages.[16]

Since the tense feature is in C but φ-features are in T, those features will be splitted and can be realized in difference syntactic positions in type (1c)

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[16] See Biberauer and Roberts (2008), who argue that a rich tense inflectional system enables verb movement to occur (, whereas a rich agreement system allows an overt subject to be dropped). As Johan Brandtler (p.c.) points out, some V2 languages such as Icelandic and German have quite a rich tense inflectional system, which I turn to later.

languages. This is confirmed by Swedish participle constructions. Swedish has two perfect participial forms. One is a form called *supine* that does not inflect for any grammatical categories. The other is a form that inflects for gender and number. The participle *erbjudit* 'offered' in (6a) is a supine form and does not inflect. On the other hand, the participle *erbjuden* 'offered' agrees with the subject *hon* 'she' and inflects for common gender and singular in (6b). The participle *erbjudna* 'offered' agrees with the subject *de* 'they' and inflects for common gender and plural in (6c).[17] In (6b-c), Φ-features are realized on the participle in v*, whereas the finite auxiliary verb *blev* 'was' in C inflects only for the tense feature.[18] Compare with French, a type (1b) language, which is illustrated in (7). In this language type, both φ-features and the tense feature are inherited from C to T and realized in T, as illustrated by the form *sommes* 'are-PRES-1PL'.

(6)   a.   Ingenting har Marit erbjudit Elsa.   [Swe.]
            nothing has Marit offered Elsa
            'Nothing, Marit (has) offered Elsa.'

      b.   Ingenting blev   hon erbjuden.
            nothing was-PAST she offered-COM-SG
            'Nothing, she was offered.'

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[17] Thanks to Johan Brandtler (p.c.) for the Swedish data of (6a,c).

[18] The participle agrees with the negative pronoun *ingenting* 'nothing' when the latter is passivized (Christer Platzack, p.c.). In i), a minimal pair of (6b), the Nominative form of the subject is changed to the Dative form. The participle *erbjudet* 'offered' agrees with the negative pronoun and inflects for neuter gender and singular.

i) Ingenting blev   henne erbjudet.   [Swe.]
    nothing was-PAST her   offered-NEUT-SG
    'Nothing was offered to her.'

As illustrated in (3iv-vi), R(*erbjudet*) Obj-agrees with *ingenting* 'nothing', which has been raised to the Spec of R(*erbjudet*). The Φ-features of *ingenting* are realized in R(*erbjudet*), which further moves to v*. The same argument applies to the French participle *invités* 'invited' in (7c). See also footnote 6.

    c. Ingenting blev   de erbjudna.
        nothing   were-PAST they offered-COM-PL
        'Nothing, they were offered.

(7)   Nous sommes   invités   à dîner par Particia.   [Fre.]
        we   are-PRES-1PL invited-PL to diner by Patricia
        'We are invited to diner by Patricia.'

Some predictions are made for embedded clauses of type (1c) languages. First, when C is occupied by nothing, C will raise the R+v* amalgam of an embedded clause to strengthen it in the same way as in main clauses. As illustrated in (8a-b), when C is realized as Ø, the tense feature in C directly raises the embedded R+v* amalgam to strengthen itself (, with an element occupying the Spec of the embedded CP).

(8)   a. Maria glaubt, Peter geht nach Hause.
        Maria believes Peter goes to   house
        'Maria believes (that) Peter is going home.'

    b. ···, [$_{CP}$ Peter R(geht)+v*+C$_{[T,\phi]}$ [$_{TP}$ T$_{[\phi]}$ [$_{v*P}$ … ~~R(geht)+v*~~ …]]]

Secondly, when C is occupied by a complementizer that appears to be irrelevant to the tense feature, the latter (, in addition to φ-features) will be inherited to T; since the tense feature of type (1c) languages is weak as stated above, it raises the verbal head in v* to strengthen itself. As illustrated by Icelandic (9a-b), the inherited tense feature in T raises the verbal head amalgam; since both the tense feature and φ-features are located in the embedded T, the latter is realized with rich inflection. The inherited tense feature of type (1c) languages, though weak, appears to allow an option: it can simply agree with the embedded verbal amalgam without raising the latter, as illustrated by Swedish and German

(10a-b). The verbal amalgam in the embedded v* has poor inflection in Swedish (10a) but has rich morphologies in German (10b).[19]

(9) a. Ég veit að Jón keypti ekki bókina. [Ice.]
   I know that Jón bought-PAST-3sg not the-book
   'I know that Jón didn't buy the book.'

  b. ..., [$_{CP}$ að$_{[T,\varphi]}$ ... [$_{TP}$ R(keypti)+v*+T$_{[T,\varphi]}$ ... [$_{v*P}$ ... R(keypti)+v* ...]

(10) a. Jag sa att Johan inte [$_{v*P}$ talade med Maria]. [Swe.]
   I said that Johan not talked with Maria
   'I said that Johan didn't talk with Maria.'

  b. Maria glaubt, dass Peter [$_{v*P}$ nach Hause geht]. [Ger.]
   Maria believes that Peter to house goes-PRES-3sg
   'Maria believes that Peter is going home.'

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[19] In Faroese, verb movement in embedded clauses is optional (Heycock et al. 2010). In Swedish, a finite verb can move in embedded clauses. In such cases, the embedded clause almost obligatorily requires an overt complementizer, as illustrated in i). In other words, when a complementizer appears and the tense feature in C is inherited to T, the tense feature of this language type, being weak, is likely to raise the verbal head in v* to strengthen itself.

i) Hon sa $^{??}$(att) hon hade inte [$_{v*P}$ hade läst den]. [Swe.]
  she said that she had not read it
  'She said (that) she had not read it.'

The tense feature seems to be inherited to T in embedded clauses of type (1c) languages, even when an overt complementizer does not appear. As illustrated in ii), the embedded clause with the in-situ finite verb *hade* can optionally drop the complementizer. In this case, it seems that the tense feature in the embedded C is inherited to the embedded T and agrees with the embedded finite verb.

ii) Hon sa (att) hon inte [$_{v*P}$ hade läst den]. [Swe.]
  she said that she not had read it
  'She said (that) she had not read it.'

I would like to thank Johan Brandtler (p.c.) for letting me know various patterns of embedded clauses of V2 languages. Importantly, when a complementizer is absent, a comma intonation is used, which in most cases indicates that the complement clause is a direct quotation (Anders Holmberg, p.c.). I leave the role that such intonational properties play in embedded clauses for future research.

3.   Conclusion

I have discussed verb movement in the LA-based derivational system. I have pointed out that in this derivational system, movement operations that do not produce a new semantic effect freely occur in syntax for any kind of categories, contra Chomsky (2001). It is thus not necessary to assume that such movement operations, including verb movement, occur in the phonological component. I have argued that since Agree/valuation between the tense feature and a verbal head does not require any movement or any morphological support, verb movement, in the unmarked case, does not occur. Languages including, e.g. English, do not have verb movement and have a relatively poor inflectional system, whereas languages including, e.g. French and V2 languages, have verb movement either to T or to C and a relatively rich inflectional system. I have suggested that the tense feature of the former language type is strong, whereas the latter language type has a weak tense feature and requires verb movement and much morphological support to strengthen it. This argument is confirmed by the traditional observation that the inflectional system, e.g. of English, is relatively poor, whereas the inflectional system, e.g. of French and V2 languages, has quite rich inflectional morphologies.

Following the LA-based derivational system, verb movement is interpreted in the way opposite to the traditional claim represented by Chomsky (1995), where a strong T with rich inflectional morphologies causes verb movement, contrary to a weak T with poor inflections. In the LA-based derivation, the tense feature of type (1a) languages is strong, since valuation between the tense feature and a verbal head does not require any movement or any morphological support. The tense feature of type (1b-c) languages, on the other hand, is weak: they require verb movement as well as relatively rich morphological inflections to strengthen the tense feature.

References

Belletti, Adriana. 1990. *Generalized Verb Movement: Aspects of Verb Syntax.* Turin: Rosenberg and Sellier.

Besten, Hans den, and Gert Webelhuth. 1987. Adjunction and Remnant Topicalization in the Germanic SOY-Languages. Paper presented at GLOW (Venice).

Biberauer, Theresa, and Ian Roberts. 2008. Subjects, Tense and Verb Movement in Germanic and Romance. ms., University of Cambridge.

Borer, Hagit. 2005a. *In Name Only. Structuring Sense, Volume I.* Oxford: Oxford University Press.

Borer, Hagit. 2005b. *The Normal Course of Events. Structuring Sense, Volume II.* Oxford: Oxford University Press.

Borer, Hagit. 2013. *Taking Form: Structuring Sense Volume III.* Oxford: Oxford University Press.

Burzio, Luigi. 1986. *Italian Syntax.* Dordrecht: Kluwer.

Chomsky, Noam. 1981. *Lectures on Government and Binding.* New York: Mouton de Gruyter.

Chomsky, Noam. 1986. *Knowledge of Language.* Westport, CT: Praeger.

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

Chomsky, Noam. 2000. Minimalist Inquiries: The Framework. In *Step by Step*, ed. by Roger Martin, David Michaels, and Juan Uriagereka, 89-156. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by Phase. In *Ken Hale: A Life in Language*, ed. by Michael Kenstowicz, 1-52. Cambridge, MA: MIT Press.

Chomsky, Noam. 2004. Beyond explanatory adequacy. In *Structures and Beyond: The Cartography of Syntactic Structures, Volume 3*, ed. by Adriana Belletti, 104-131. Oxford: Oxford University Press.

Chomsky, Noam. 2008. On Phases. In *Foundational Issues in Linguistic Inquiry: Essays in Honor of Jean-Roger Vergnaud*, ed. by Robert Freidin, Carlos P. Otero, and Maria Luisa Zubizarreta, 133-166. Cambridge, MA: MIT Press.

Chomsky, Noam. 2013. Problems of projection. *Lingua* 130:33-49.

Chomsky, Noam. 2014. Problems of Projection: Extensions. ms., MIT.

Cinque, Guglielmo. 1999. *Adverbs and Functional Heads: A Crosslinguistic Perspective*. Oxford: Oxford University Press.

Emonds, Joseph. 1978. The verbal complex V'-V in French. *Linguistic Inquiry* 9:49-77.

Epstein, Samuel David, Hisatsugu Kitahara and T. Daniel Seely. 2012. Structure building that can't be. In *Ways of Structure Building*, ed. by Myriam Uribe-Etxebarria and Vidal Valmala, 253-270. Oxford: Oxford University Press.

Grimshaw, Jane. 2000. Locality and Extended Projection. In *Lexical Specification and Insertion*, ed. by Peter Coopmans, Martin Everaert, and Jane Grimshaw, 115-133. Amsterdam: John Benjamins.

Heycock, Caroline, Antonella Sorace and Zakaris Svabo Hansen. 2010. V-to-I and V2 in subordinate clauses: An investigation of Faroese in relation to Icelandic and Danish. *The Journal of Comparative Germanic Linguistics* 13:61-97.

Holmberg, Anders, and Thorbjörg Hróarsdóttir. 2003. Agreement and movement in Icelandic raising constructions. *Lingua* 113:997-1019.

Holmberg, Anders and Christer Platzack. 1995. *The Role of Inflection in Scandinavian Syntax*. Oxford: Oxford University Press.

Matushansky, Ora. 2006. Head Movement in Linguistic Theory. *Linguistic Inquiry* 37:69-109.

Obata, Miki, and Samuel David Epstein. 2012. Feature-splitting internal merge:

The case of *tough*-constructions. In *Ways of Structure Building*, ed. by Myriam Uribe-Etxebarria and Vidal Valmala, 366-384. Oxford: Oxford University Press.

Pesetsky, David, and Esther Torrego. 2001. T-to-C movement: Causes and consequences. In *Ken Hale: A Life in Language*, ed. by Michael Kenstowicz, 355-426. Cambridge, MA: MIT Press.

Pollock, Jean-Yves. 1989. Verb movement, Universal Grammar, and the structure of IP. *Linguistic Inquiry* 20:365-424.

Rizzi, Luigi. 1997. The Fine Structure of the Left Periphery. In *Elements of Grammar*, ed. by Liliane Haegeman, 281-338. Dordrecht: Kluwer Academic Publishers.

Richards, Norvin. 2001. *Movement in Language: Interactions and Architectures*. Oxford: Oxford University Press.

Roberts, Ian. 1993. *Verbs and Diachronic Syntax*. Dordrecht: Kluwer.

Svenonius, Peter. 1994. C-selection as feature-checking. *Studia Linguistica* 48(2):133-155.

Travis, Lisa. 1984. Parameters and Effects of Word Order Variation. Cambridge, MA: MIT dissertation.

Truckenbrodt, Hubert. 2006. On the semantic motivation of syntactic verb movement to C in German. *Theoretical Linguistics* 32-3:257-306.

Vikner, Sten. 1990. *Verb Movement and Expletive Subjects in the Germanic Languages*. Oxford: Oxford University Press.

Wiklund, Anna-Lena, Gunnar Hrafn Hrafnbjargarson, Kristine Bentzen and Þorbjörg Hróarsdóttir. 2007. Rethinking Scandinavian verb movement. *Journal of Comparative Germanic Linguistics* 10:203-233.