Do-support Crosslinguistically. When Head Chains Split.

SuSurrus, UMass, 9 Nov 2018
Asia Pietraszko
UConn
(joint work with Karlos Arregi, University of Chicago)

1 Introduction

1.1 Traditional analysis of *do*-support

(Chomsky 1957, Lasnik 1981, Halle & Marantz 1993, Bobaljik 1995, Embick & Noyer 2001)

(1) A relation between V and T (HM, Affix Hopping etc) is established:

$$[_{TP}\ \underbrace{T\ [_{VP}\ V}\ \dots\ ]] \rightarrow \textbf{no}\ \textit{do}\text{-support}$$

(2) The relation between V and T, cannot be established:

$[_{TP}\ T\ [_{VP}\ V\ \dots\ ]] \rightarrow$ this violates some constraint $\rightarrow$ *do*-support is the **repair**

Pieces of the traditional analysis:

i. Some operation fails to apply
ii. Some constraint induces a violation in (2) (e.g. affixal properties of T)
iii. An insertion mechanism supplies T with *do*.

1.2 Claims

_Do_-support is not triggered by failure of some operation
The usual operation is established, but is later altered.

_Do_-support is not triggered by idiosyncratic requirements of particular heads
Positions in which *do* can be inserted are predictable from independent factors.

Section 2 Analysis: *Do* is inserted in split head chains.

Section 3 *Do*-support is not triggered by failure of Head Movement or Lowering.

Section 4 *Do*-support is not triggered by idiosyncratic requirements of particular heads.

Section 5 A formal implementation of chain splitting and *do*-insertion.

2 Analysis: *Do* is inserted in split head chains

- Heads in the clausal spine form a **head chain**[1]
- A head chain is pronounced as **an inflected verb** in the highest *-position.

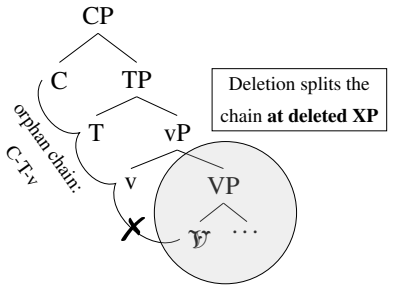
French declarative clause $[_{TP}\ \underbrace{T^*\ [_{vP}\ v\ [_{VP}\ V}\ \dots$

English declarative clause $[_{TP}\ \underbrace{T\ [_{vP}\ v^*\ [_{VP}\ V}\ \dots$

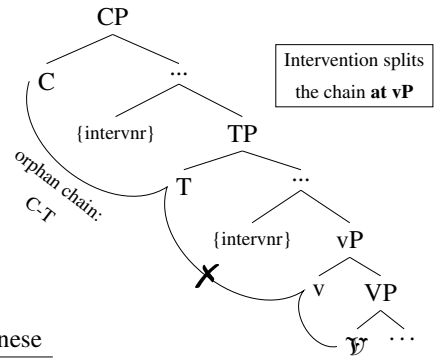
English interrogative clause $[_{CP}\ \underbrace{C^*\ [_{TP}\ T\ [_{vP}\ v^*\ [_{VP}\ V}\ \dots$

- **Parameter:** Some languages require ***integrity*** of head chains: they have a special $\mathcal{Y}$
- In $\mathcal{Y}$-languages head chains may split if they're integrity is disrupted.

(3) **Split-by-deletion**



(4) **Split-by-intervention**[2]



	English	Danish	Monnese
Split by deletion	✓	✓	?
Split by intervention	✓	✗	✓

Orphan chain
A head chain that becomes dissociated from a lexical verb due to splitting.

***Do* is inserted in orphan chains and surfaces where the verb normally would**.

[1] The precise mechanism of head chain formation is orthogonal. Possibilities include agreement, head movement or a mirror-theoretic complementation line. We implement is as Generalized Head Movement, discussed in section 5
[2] (by heads & specifiers, not adjuncts: Bobaljik 1995)

3 *Do*-support is not due to failure of Head Movement or Lowering

The traditional view makes a wrong predition

A head is stranded if it's affixal but cannot combine with V (by HM, Lowering)

WRONG PREDICTION: a language with V-to-T movement should not have *do*-support.

3.1 Monnese has both V-to-T movement and *do*-support

Both auxiliaries and lexical verbs move to T and precede adverbs (Benincà & Poletto 2004:59):

(5) l **à** *semper* tʃakolà
he **have.3SG** *always* spoken
'He's always spoken.'

(6) l **tʃàkola** *semper*
he **speak.3SG** *always*
'He always speaks.'

$[_{TP}$ T+**have** *always* $[_{AuxP}$ <have> …]] $[_{TP}$ T+**speak** *always* $[_{VP}$ <speak> …]]

→ The affixal requirement of T is always satisfied by verb-movement.

Additionally, Monnese has T-to-C (Benincà & Poletto 2004:63-68)

(7) kwal **è** *-t* tʃerkà fora?
wh **have.2SG** *-you* searched out
'What have you chosen?'

(8) ke **fe** *-t* majá?
what **do.2SG** *-you* eat.INF
'What do you eat?'

$[_{CP}$ C+**T+have** $[_{TP}$ subject <T+have> …]] $[_{CP}$ C+**T+do** $[_{TP}$ subject <T+?> …]]

T-to-C with lexical V triggers *d*o-support

⇒ Monnese has *do*-support *despite having V-to-T movemenet*

A possible defense of the traditional view: There is no V-to-T in (8)
⇒ A new problem arises: V-to-T is precluded by T-to-C – **a countercyclic derivation**

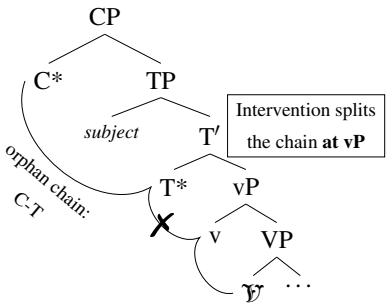
3.2 Monnese *do*-support arises due to Split-by-intervention

Monnese is like French: *it has T**
Monnese is like English: *it has* $\mathcal{V}$

$[_{TP}$ T* $[_{vP}$ v $[_{VP}$ $\mathcal{V}$ …

The orphan chain is pronounced in C as *do*:

(9) **T-to-C: Split-by-intervention**



→ Two chains after splitting:
i. V-v
ii. T-C (the orphan chain)

→ *do* is inserted in the orphan chain, and surfaces it C, the highest *-position.

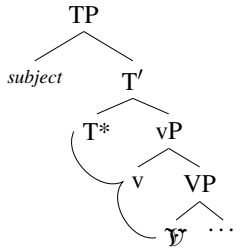
CORRECT PREDICTION: The lexical verb is pronounced low, despite the normal V-to-T.

(10) l **tʃàkola** *mia*
he **speak.3SG** *not*
'He doesn't speak.'
(Benincà & Poletto 2004:60)

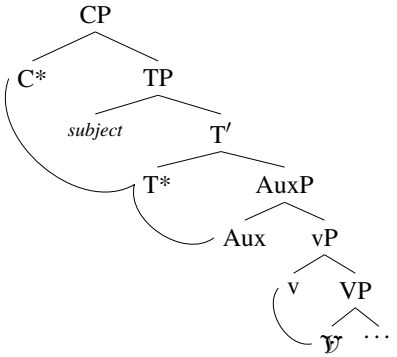
(11) fe *-t* *mia* **majal** 'l pom?
do.2SG -you *not* **eat.INF** the apple
'Do you not eat the apple?'
(Bjorkman 2011:190–191)

The chain doesn't split in other sentence types:

(12) **V-to-T: no intervention**



(13) **Aux: no integrity constraints**[3]



⇒ **V-to-T movement does not preclude *do*-support** (See also Bjorkman 2011).

[3] In the absence of *-positions, head chains are pronounced in the highest position by default.

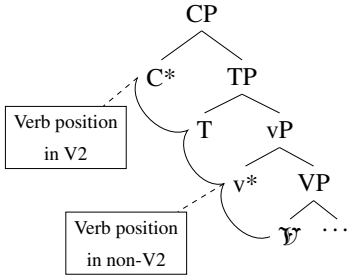
4 *Do*-support is not an idiosyncratic requirement of particular heads

***Do* can surface in C, T, or v, or in multiple positions, in a predictable way**

4.1 Mainland Scandinavian (MSc): *Do* in C or v

Position of *do* follows from independent parameters on verb position

(14) **Finite verb positions in Danish:**

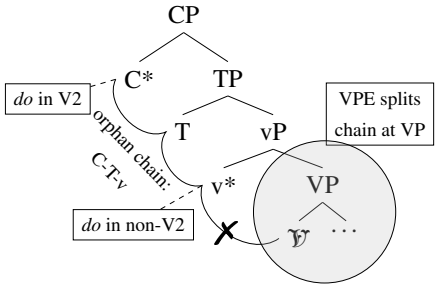


(15) Om morgenen **drikker** *Peter* ofte kafe.
in the.morning **drinks** *Peter* often coffee
'Peter often drinks coffee in the morning.' Danish (Vikner 1995:47)

(16) Vi ved at Peter *ofte* **drikker** kaffe om morgenen.
we know that Peter *often* **drinks** coffee in the.morning
'We know that Peter often drinks coffee in the morning.' Danish (Vikner 1995:47)

(den Besten 1983, Taraldsen 1985, Holmberg and Platzack 1995, Vikner 1995)

(17) ***Do* surfaces in those same positions under VP ellipsis & Split-by-deletion:**



The orphan chain,
v-T-C,
contains both pronunciation positions.

(18) Mona og Jasper *vaskede bilen,* eller rettere Mona **gjorde** Δ_{VP}
Mona or Jasper *washed the.car,* or rather Mona **did**
'Mona or Jasper washed the car, or rather Mona did.' Danish (Houser et al. 2011:249)

(19) Der er en forventning om, at vi skall *gå videre,* selv om det snarere vil
there is an expectation about that we shall *go further* even if it rather will
være en stor skuffelse end katastrofalt, hvis vi *ikke* **gør** Δ_{VP}
be a big disappointment than catastrophic if we *not* **do**
'We are expected to go further. That said, it would be a great disappointment, not a catastrophe, if we don't.' Danish (Houser et al. 2011:251–252)

(Sailor 2009, 2018, Houser et al. 2011, Platzack 2012, Thoms 2012, Bentzen et al. 2013)

⇒ No need to stipulate that v and C in Danish have affixal properties.
⇒ *do* appears in those positions because and when other verbs do.

4.2 English: *Do* in C or T

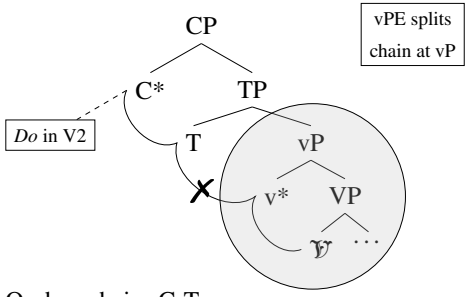
Surface position of *do* follows from site of split

Verb typically surfaces in v:

(20) Mary *often* **drinks** coffee.

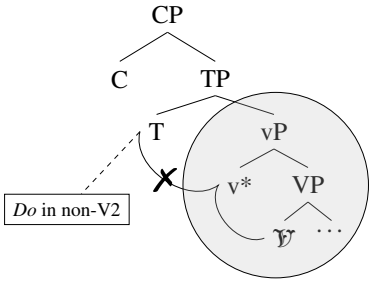
In **vP ellipsis & Split-by-deletion**, *do* surfaces in C or T, since v is not in the orphan chain:

(21) **Did** *Mary* Δ_{vP} ?



Orphan chain: C-T

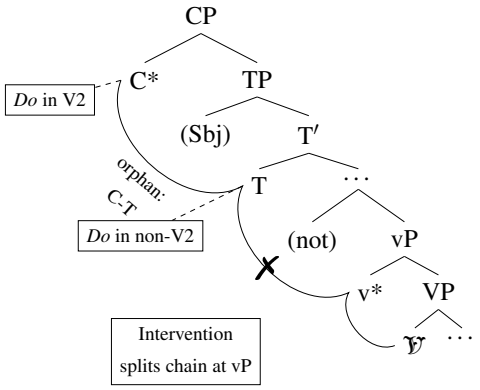
(22) Mary **did** Δ_{vP}



Orphan chain: T

With **Split-by-intervention**, *do* also surfaces in C or T:

(23)



(24) **Did** *Mary* wash the car?

(25) Mary **did** *not* wash the car.

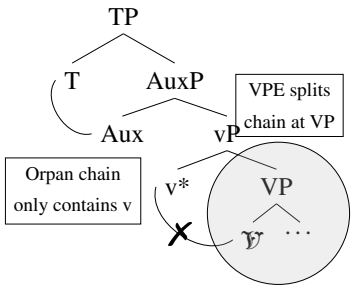
4.3 VP ellipsis under auxiliaries: *Do* in v

Both English and MSc have a low pronunciation position for the main verb (in non V2):

(26) $[_{TP}\ T\ [_{vP}\ \mathbf{v}^{*}\ [_{VP}\ V\ \ldots\ ]]]]$

- vPE in English deletes that position
- VPE in MSc does not → *do* can surface low

(27) VPE can also result in *do* **under auxiliaries**:



Auxiliary forms its own chain: **T-Aux**

Lexical chain: **v-V**

→ after splitting: **v**

⇒ ***do*-support in v**

In MSc:

(28) Nu *fisker* jeg ikke *efter en partner.* Men hvis jeg *havde* **gjort** Δ_{VP}, havde jeg …
now *fish* I not *after a partner* but if I *had* **done** had I
'I'm not looking for a new partner. But if I had, I would …'

Danish (Houser et al. 2011:271)

In British English (BrE):

(29) Kim isn't *running for office* now, but she *has* **done** Δ_{VP} in the past.

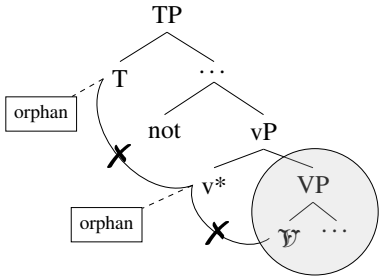
(Thoms & Sailor 2018:1)

(Chalcraft 2006, Haddican 2007, Aelbrecht 2010, Thoms 2011, Baltin 2012, Thoms & Sailor 2018)

4.4 *Do* in both T and v in the same sentence

Double *do* in BrE (Chalcraft 2006): Split-by-deletion plus Split-by-intervention.

(30) John said he would *help*, but he **does**n't usually **do** Δ_{VP}. (Chalcraft 2006:5)



Orphan chain after VPE: **T-v**

Orphan chains by intervention:

i) **T**
ii) **v**

do-support in each orphan chain

(31) INTERIM SUMMARY:

a. Some languages are prone to chain splitting ($\mathscr{Y}$)
b. *Do*-support arises due to splitting of a ***successfully formed chain.***
c. Splits may be caused by deletion and/or intervention (language-specific)
d. Within split chains, *do* appears as a verb normally would.

Pieces of the traditional analysis:

i. Some operation fails to apply → ✗ (Monnese)
ii. Some constraint, e.g. affixal properties of T → ✗ (MSc, BrE, AmE)
iii. An insertion mechanism supplies T with *do*. → coming up

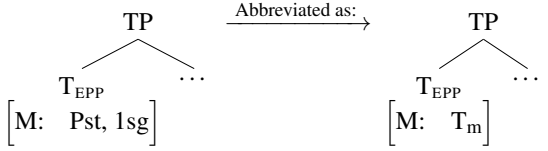
5 Implementation of "*do*-insertion" (Arregi & Pietraszko, 2018)

- The appearance of *do* is not due to an insertion process
- Rather, *do* is a special spellout of the verb (an allomorph of V)[4]
- The process triggering the defective allomorph of V is found elsewhere (triggering defective allomorphs of T)

5.1 Head Chains

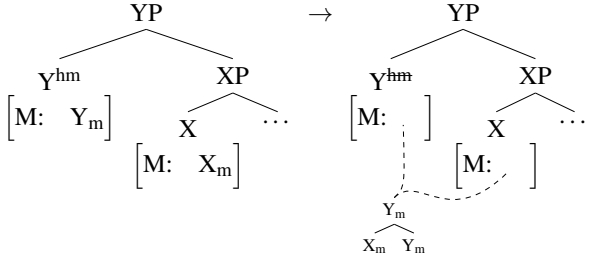
(32) Two types of features:
  a. *Syntactic*: involved in structure building (e.g. Cat, Sel, EPP)
  b. *Morphological*: target of Vocabulary Insertion (e.g. tense, φ)

(33) Syntactic and morphological features of T (an illustration)

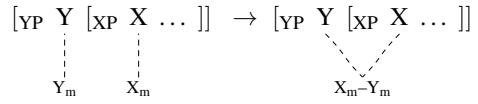


(34) **Generalized Head Movement** – an operation that relates syntactic head by unifying their morphological features (feature sharing)

(35) Generalized Head Movement (tree representation)

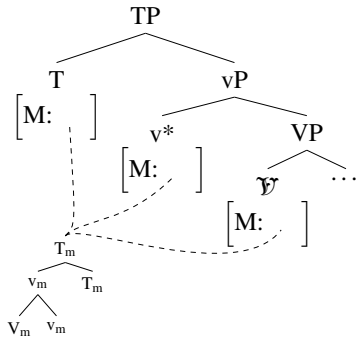


(36) Generalized Head Movement (bracket representation)

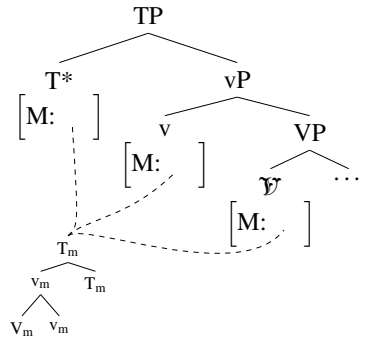


[4] Different accounts which treat *do* as an allomorph of the verb (or v, rather) include Thoms 2011, Bjorkman 2011.

(37) English: spellout in v*



(38) Monnese: spellout in T*



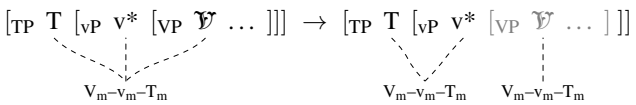
(39) **Head Chain** – a sequence of syntactic terminals that share a single M-value.

5.2 Splitting Head Chains

- Only some language impose integrity conditions on head chains. We mark them with $\mathscr{V}$, rather than V.
- In those languages, one or both of the following rules may apply:

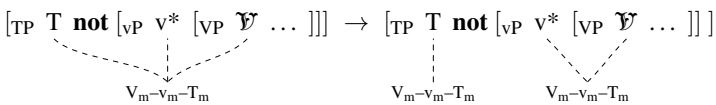
(40) **Split by Deletion:**
In a head chain terminating in $\mathscr{V}$, such that an XP containing part of the chain is marked for deletion, split the chain at XP.

Danish VPE splits the chain at VP:



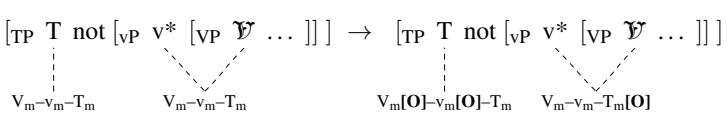
(41) **Split by Intervention:**
In a head chain terminating in $\mathscr{V}$, such that a specifier intervenes between the top of the chain and $\mathscr{V}$, split the chain at vP.

English negation splits the chain at vP:



(42) ***Orphan Assignment***
Assign [O] to morphological terminal X_m in a head chain that does not contain the syntactic terminal X.

(43) Orphan Assignment in English negative sentences:



- In the higher chain, V_m and v_m are orphan nodes
- In the lower chain, T_m is an orphan node

(44) John did not play(*ed).

The [O] feature may alter the spellout of nodes as it is present at Vocabulary Insertion:

(45) English
a. V[O] → *do*
b. T[O] → ∅

Summary:

a. *do* is not inserted
b. the node spelled out of as *do* is already there: the lexical V
c. its deficient spellout is due to Orphan Assignment, as process that targets other heads as well

5.3 Orphan nodes versus absence of nodes

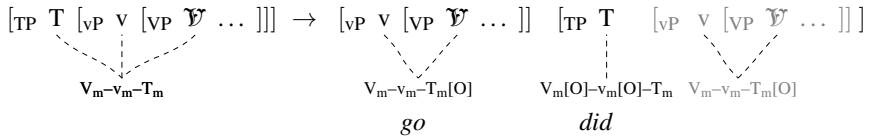
- The traditional analysis of *do*-support in English doesn't need defective nodes:
No relation between V and T → no T in V and no V in T
- There is evidence that the defective nodes are there:
  - T: inflection doubling in Swedish (orphan T can have the usual pronunciation)
  - V: V-stranding VP-ellipsis, verb doubling (occurrences of *do* in languages with 𝒱 correspond to occurrences of a full verb in languages without 𝒱)

✤

(Assumption: phrasal movement is copy+deletion)

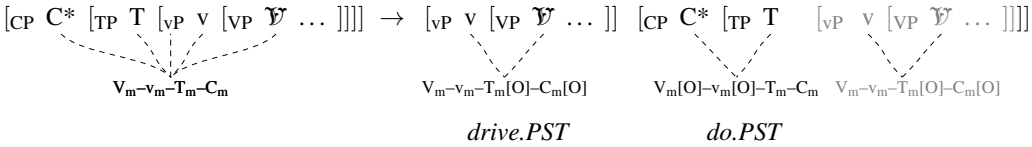
vP-fronting in English: V[O] and T[O] both have special VIs

(46) [vP {**Go/*Went**}], he did vP.



vP-fronting in Swedish: only V[O] has a special VI

(47) och [vP {*__köra__ / __körde__} bilen] **gjorde** han vP
and drive.INF / drive.PST the.car do.PST he
'... and drive the car he did.' Swedish (Platzack 2012:281)



In Swedish, there is no special VI for T[O] → regular pronunciation

✤

Crosslinguistically, *do* alternates with a full lexical verb:

(48)

Language type:	𝒱	V
VP ellipsis	*do*-support	V-stranding
VP fronting	*do*-support	V-stranding

(49) *Do-support vP-ellipsis*
a. Did you watch the game?
b. [TP I **did** [vP …]].

(50) *Verb-stranding vP-ellipsis* (Polish)
a. Oglądałaś mecz?
watch.2sg game
'Did you watch the game?'
b. [TP **Oglądałam** [vP …]].
watched.1SG
'I did.'

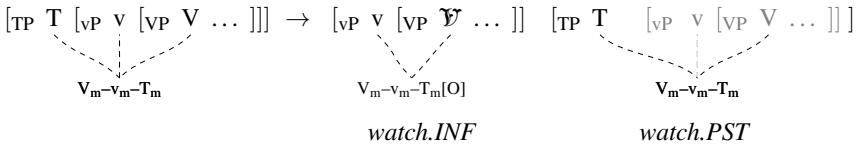
(51) *Do-support VP fronting*

[vP Watch the game] [TP I **did** [vP …]]

(52) *Verb-stranding VP-fronting* Polish

[vP Oglądać mecz] [TP **oglądałam** [vP …]]
watch.INF game watched.1SG

Languages without $\mathcal{V}$, like Polish, don't care about deletion → no chain-splitting:



- The lower chain was never split → no orphans (full pronunciation)
- The higher chain is a *partial* copy of the lower ne → T is an orphan (defective pronunciation)

6 Conclusion

- *do*-support is special: it doesn't correlate with head-movement vs lowering;
  - This is easily done in a theory that unifies head movement and lowering under a single relation
- *do*-support is not special: we can predict the "insertion" sites
  - They overlap with independently evidenced spellout positions in a chain
- *do* is an instance of an orphan head – a more general phenomenon, observed with other heads (T) and even in languages without do-support

References

Aelbrecht, L. (2010) *The syntactic licensing of ellipsis*, John Benjamins.
Arregi, K., & A. Pietraszko (2018) "The ups and downs of head displacement," ms., University of Chicago, University of Connecticut.
Baltin, M. (2012) "Deletion versus pro-forms," *NLLT* 30, 381–423.

Benincá, P., & C. Poletto (2004) "A case of *do*-support in Romance," *NLLT* 22, 51–94.
Bentzen, K., J. Merchant, & P. Svenonius (2013) "Deep properties of surface pronouns," *Journal of Comparative Germanic Linguistics* 16, 97–125.
den Besten, H. (1983) "On the interaction of root transformations and lexical deletive rules," in W. Abraham, ed., *On the formal syntax of the Westgermania*, John Benjamins, 47–131.
Bjorkman, B. (2011) *BE-ing default*, Doctoral dissertation, MIT.
Bobaljik, J. (1995) *Morphosyntax*, Doctoral dissertation, MIT.
Chalcraft, F. (2006) "*Do*-doubling in varieties of English," ms., University of Cambridge.
Chomsky, N. (1957) *Syntactic Structures*, Mouton.
Embick, D., & R. Noyer (2001) "Movement operations after syntax," *LI* 32, 555–595.
Haddican, B. (2007) "The structural deficiency of verbal pro-forms," *LI* 38, 539–547.
Halle, M., & A. Marantz (1993) "Distributed Morphology and the pieces of inflection," in K. Hale & S. J. Keyser, eds., *The view from Building 20*, MIT Press, 111–176.
Holmberg, A., & C. Platzack (1995) *The role of inflection in Scandinavian syntax*, OUP.
Houser, M., L. Mikkelsen, & M. Toosarvandani (2011) "A defective auxiliary in Danish," *Journal of Germanic Linguistics* 23, 245–298.
Lasnik, H. (1981) "Restricting the theory of transformations," in N. Hornstein & D. Lightfoot, eds., *Explanation in linguistics*, Longman, 152–173.
Platzack, C. (2012) "Cross Germanic variation in the realm of support verbs," in P. Ackema, R. Alcorn, C. Heycock, D. Jaspers, J. V. Craenenbroeck, & G. V. Wyngaerd, eds., *Comparative Germanic Syntax*, John Benjamins, 279–310.
Sailor, C. (2009) "Tagged for deletion," Master's thesis, UCLA.
Sailor, C. (2018) "The typology of head movement and ellipsis," *NLLT* 36, 851–875.
Taraldsen, K. T. (1985) "On verb second and the functional content of syntactic categories," in H. Haider & M. Prinzhorn, eds., *Verb second phenomena in the Germanic langauges*, Foris, 7–25.
Thoms, G. (2011) "From economy to locality," ms., Strathclyde University. To appear in *Minimalist approaches to syntactic locality*, CUP.
Thoms, G. (2012) "Verb movement and ellipsis in Scandinavian," ms., University of Edinburgh.
Thoms, G., & C. Sailor (2018) "When silence gets in the way," ms., University of Glasgow & University of Tromsø. To appear in *NELS 48*, GLSA.
Vikner, S. (1995) *Verb movement and expletive subjects in the Germanic languages*, OUP.