The view from the syntax: on the relation between linear order and hierarchical structure

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1 General Introduction

Series of Lectures organized around the following general theme:

- To what extent are direct interfaces of the syntax semantics and syntax phonology interfaces based on linear order within reach?
  
  - Standard view: there are syntax semantics mismatches (as well as syntax phonology mismatches).
    
    Many ’mismatches’ are resolved by undoing syntactic movements:
    
    (1) a. Mary can’t swim
        b. <Mary> n’t can <Mary> swim
    
    But some cannot: QR.
    
    (2) someone saw everyone

  - Learners have only access to linear strings.
    
    The null hypothesis: together with UG principles, this should suffice to figure out the hierarchical structures on which meanings are calculated. From this perspective covert movement or feature movement is a problem.
    
    - Explore view from the syntax:
      
      incorporate ’innovations’ coming out of Antisymmetry into a Minimalist Theory Kayne (1994) LCA: linear order is a reflection of hierarchical structure\(^1\). and continuing the ’Cartography’ enterprise from the 80ies and nineties: syntactic structures are highly decompositional structures. We need to figure out what the atoms are, what the sequence of merge is within a language, and what is stable or may vary across languages.

1.1 More specifically

...to what extent can the syntax semantics and syntax phonology interfaces be taken to be direct? (to what extent is there postsyntactic structure building or structure manipulation, or low spell out?)

I will (continue to) argue that the current standard views on this topic are overly pessimistic, and are in fact often based on results from earlier stages of the theory. (schrinking syntax has not been useful)

Point of departure: direct interfaces are not only desirable, but are (perhaps) also within reach, within a Minimalist syntactic theory that incorporates cartography (i.e. is highly decompositional) and Antisymmetry (Spec H C structures in conjunction with leftward movement)\(^2\).

In the past (and ongoing)

- Explored syntax-phonology mismatches w.r.t. morpheme order\(^3\) Here I will turn more to form-meaning interaction. (There will be some crossover to phonology, but the main focus will be on the interpretative interface).

- Within approaches that assume ’One single computational engine/one syntax’.
  
  QR/scope, and phonology/spell out
  
  with Scope is based on hierarchical structures c-command.

---

\(^1\) Antisymmetry requires a good understanding of the empirical underpinnings of the theory, see Sportiche, Koopman, and Stabler (2013)

\(^2\) cf. also Abels and Neeleman (2012).

Main Question: Can we distinguish empirically between two hypotheses below: (i) low spell of quantifiers is allowed, or (ii) QPs occupy scope positions at some point in the derivation (Kayne (1998))?

1. Hypothesis 1: QR: A syntactic object can be interpreted higher than where it is pronounced in the syntax.

   LF syntax: QR (May (1977), up to the 1995):

   (4) Two volunteers greeted every producer.
       a. [ every producer_j [ two volunteers t_i greeted t_j ]]
       b. [ two volunteers _i [ every producer t_j t_i ]].

   – QR in the syntax (1995-)?

   (5) Minimalist Program Chomsky (1995b)4 One single computational engine/one syntax:

       Movement=I(nternal Merge), copy and delete

       PH decides which copy to pronounce. (Fox and Nissenbaum (1999) Extrapolation and scope. QR)

       (6) a. [ every producer_j [ Two volunteers greeted [PH every producer. ] ] ]
           b. [ ∀ [ Two volunteers greeted [PH every producer. ] ] ]

   – Standard assumption: The wide scope quantifier is pronounced in a lower position than where it is interpreted. How to challenge it?
   Antisymmetry– Left right asymmetries, "Universal 20" patterns and universal hierarchies.

2. Hypothesis 2.

   Kayne (1998): "cases of covert phrasal movement or feature movement can be advantageously rethought in terms of overt movement" UG leaves no choice. → LF and PF interpretation are informative about the sequence of Merge.

   (7) Overt Scope Principle

   A syntactic object cannot be interpreted higher than where it is pronounced in the syntax.

   → Reconstruction (cyclic interpretation) is OK, but not QR (or spell out of low copy)5

   – What would the syntax of (6-a) need to look like?

   More complex derivation:

   (8) a. two volunteers greeted every producer Move QP to scope position
       b. [ [ every producer_j | [α two volunteers greeted ] | ] scope (OK); Move α ]
       c. [ [α two volunteers greeted ] [ every producer_j [α t ] ] ] 2 volunteers will move up further

Simplified trees that represent the different scopal relations:

4Sometimes a confusion is made between the Minimalist Program and Minimalist Practice, i.e. the specific implementation that is adopted. It remains important at all times to keep in mind what we are after
5This goes against a strong criterial freezing principleRizzi (2006)
two volunteers greeted \( t_j \)  

\[
\begin{array}{c}
\alpha \\
two \text{volunteers greeted } t_j \\
\text{every producer}_j \\
\ldots \ t_j \ldots \\
\end{array}
\]

and surface scope: the universal Q is lower than the position where the subject QP takes scope: \(^6\)

If this is on the right track, the syntactic structure is more "complicated" than we are used to.  
How would we support such an analysis?  
– Arguments internal to English? (model I-language)  
\[ \rightarrow \text{interaction with other syntactic processes.} \]

\( \text{(9) two volunteers greeted every producer. Bill did too} \)

only reading (6-b) (Fox (2000))

\* Fox (2000):  
**Scope economy:** QR of a quantifier (crossing another quantifier) is allowed when it has a semantic effect and disallowed when it does not.

VP ellipsis and scope:

\( \text{(10) } \)

\[ \begin{array}{l}
a. \text{Some boy admires every teacher, and some girl does too } \forall > \exists \text{ or} \\
b. \text{Some boy admires every teacher, and Mary does too } \text{some} > \text{every} \\
\end{array} \]

\( \text{(11) } \)

\[ \begin{array}{l}
a. \text{Wide scope, (long) QR possible in both the first conjunct and the second one in a.} \\
b. \text{Wide scope is blocked in the first conjunct on b.} \\
c. \text{Parallelism: Ellipsis requires parallel structures, so wide scope must be impossible in the elliptical conjunct.} \\
\end{array} \]

Since \( \text{Mary} \) is not a scope bearing element, QR of \( \text{every } N \) would not result in a different reading, and hence, by scope economy QR does not happen. Therefore it cannot happen in the first conjunct either. \( \rightarrow \) QR only happens if it makes a difference in meaning.  
\[ \text{..but QR in languages with scrambling (overt QR)} \]

\* General question: the role of Economy conditions in UG.

\(^6\)relevant literature: Beghelli and Stowell (1997), ...
Comparative syntax.
...imagine VP movement past the QP is lacking.

(12) where do we get scopal ambiguities, where don't we, and what does that correlate with?7

Expectation: undoing syntactic movement reveals the scope hierarchy.
Better chance of determining this in head final languages (Universal 20).

• General questions about architecture of UG. Narrow syntax or not?
  Head movement or not? Are inflected lexical items with (ordered) feature bundles allowed? Antisymmetry or not? Postsyntactic movements/reordering or not?
  How do we decide/evaluate different frameworks?

• Results from formal language theory: theories must fall within mildly context sensitive grammars. (see Joshi (1985)).
  As Stabler (2011) and his colleagues have shown frameworks with antisymmetry or without, with head movement or without, with right and left adjunction all fall within the class of Mildly Context sensitive grammars. This means that questions of implementation cannot decide between frameworks.

(13) syntax we need is the syntax that is appropriate for the interfaces, and that yields insights into language variation.
  Important role of comparative syntax. Insights into English can come from properties of Japanese.

Price to pay (for us linguists): longer syntactic derivations, and working them out. This does not mean increased complexity (Stabler (2011)).

but what this means for the future is that syntacticians need to work with computational linguists to build apps that we can use to help us figure out the exact empirical predictions that the derivations make.

• Program
  – lecture 2: Background on antisymmetry and functional Ps/ case, including of- insertion, Case/Prepositional Cs, and PP extraposition, P stranding. )
    Negative indefinites Burnett, Koopman, and Tagliamonte (2018a) and some comparative Germanic.
  – lecture 4: inverse scope out of PPs contained within DPs
  – workshop: When the syntax is not as it seems: insights from the interfaces.

1.2 Basic theoretical assumptions that I will assume
Theoretical Assumptions underlying my work: Minimalism with Antisymmetry; Kayne (1994), LCA.

• One Syntax:
  Hypothesis: There is one structure building algorithm in UG: (binary) Merge. Merge (External, Internal).
  • atoms: small, correspond to single features (not feature complexes)
  • strictly derivational (bottom up)

7See Bobaljik and Wurmbrand (2012)
• extension condition; outputs phrases (cyclic spell out, and interpretation), phrases are further input to Merge, etc.

• morphology is the output of syntax

• "selection" (cooccurrence) strictly locally satisfied under sisterhood at some point in the derivation (Spec head Koopman (2006) now called upward agree);

• Not: narrow syntax and postsyntactic syntax. Ps, Case and infinitval markers etc are an important part of the syntax.

• Not: atoms: feature complexes, atoms of syntax are "words", or 'ordered complex feature bundles".

• Not: morphology follows all syntax Arregi and Nevins (2012)

• Not: the output of syntax are words (=X-zeros). Spell out domains are phrases forming "phonological domains"/phases.
1.3 From Phrase structure rules to X-bar theory to Antisymmetry and Bare Phrase structure

- 1960-1970 Phrase structure Rules
- 1970–1994 Development of X-bar theory (: X-bar theory is a primitive of UG.
- Kayne (1994) LCA (Linear Correspondence Axion)–puts deriving X-bar theory on the agenda.
- Chomsky (1995a) Bare phrase structure.

1.3.1 X-bar theory

(14)

Hierarchical structure

(15) a. Head Compl
    b. Spec [ H Compl ]
    c. Adjuncts (sister to XP) (modifier rule)

Merge: (E-"base generation” or movement)

(16) a. YP and ZP are maximal projections (all properties of heads are satisfied)
    b. X has a max of one Spec (or multiple specs, Chomsky 1993)
    c. Binary branching Kayne (1984): X has max of one complement
    d. Adjuncts are maximal projections (or heads, see Cinque (1999))
    e. Each X is dominated by a XP, each XP has a head.
    f. Adjuncts adjoin to XP (Sisterhood: modification)

Internal merge: (Movement= copy + Delete)

    b. XP movement targets Spec. ( Spec, TP, i.e. movement/raising to subject, A-movement
    c. XP movement targets Spec, CP (i.e. wh-movement targets Spec, CP: A’ movement)
    d. XP movement creates adjunction structures (perhaps heavy NP shift, ..) (leftward or rightward movement), "QR” ..
    (NB not always easy to determine: what categories adjoin to?)
    e. Heads move to head positions (adjunction, also called incorporation)
    f. XPs move to XP positions.
    g. X’ segments cannot move
    h. (traditionally assumed to be) disallowed/not allowed:
       adjoin a Head X to YP/WP/RP
       adjoin an ZP to X (or to Y).
Hierarchical order is disassociated from linear order

**word order typology variation**: typology and universals Greenberg (1963)

Directionality parameters (word order parameters) yield linear orders

(18) head initial/ head final

  a. Head compl (yes, no)
  b. Spec H (yes, no)
  c. Adjuncts XP and XP Adjunct (left, right)

(19) Departures of ideal language are (widely) attested, (in fact no pure types!)

(20) Violations of locality of selection (movement):
  indicate head positions, spec positions, adjunction sites.

P DP and P DP: OV and VO are symmetrical:

![Diagram of P DP and P DP]

Try: SSWL (go to test.terraling.com and choose the dataset SSWL, and search SVO, SOV, VSO, VOS, PNP, NPP: cross all.)

1.3.2 Kayne 1994: Antisymmetry Kayne (1994)

**Background early 90ies**

Discoveries made possible:

    development of clausal spine (Pollock, 1989).
    the Head Movement Constraint and the Mirror Principle Baker (1985) allow integrating morphologically rich languages into the theory (empirical coverage).

Period of rapid Progress.

In depth analyses of individual languages, including the study of DPs, deepening and broadening of the field, more and better analytical tools, development of semantics. "lexical domain": Aspectual Domain, T..Case/ quantifier domain, CP domain (topic, focus(contrast),...)


(22) Leading idea in Kayne: languages are not symmetrical.

  a. Linear Correspondence axiom (LCA):
    linear order reflects hierarchical structure-- linear order reflects asymmetric c-command
  b. Puts deriving X-bar theory on the research agenda -- Shows how the LCA derives the principles of X-theory.

C-command:
(23) $\alpha$ c-commands $\beta$ iff $\alpha$ does not dominate $\beta$ and every category dominating $\alpha$ dominates $\beta$.

Try this on:

```
A
  B
  C
D  E  F
```

(24) a. A dominates everything, and c-commands nothing
    b. B does not c-command D or E
    c. B c-commands C and F
    d. C c-commands B, D and E
    e. D and E c-command each other.

(25) **asymmetric c-command:** (holds in one direction)
    C asymmetrically c-command D and E.
    B asymmetrical c-commands F

(26) **LCA** (linear Correspondence axiom (*simplified*, read Kayne))
    If a non terminal node A asymmetrically c-commands another non terminal node B then all terminals
    $\alpha$.. dominated by A precede terminals $\beta$.. dominated by B.

```
VP
  V
  NP
    see
      N
        Marie
```

(27) V asymmetrically c-command Marie. by the LCA: see must precede Marie.

(28) The conclusion in (27) would follow even if we draw the OV structure!

```
VP
  NP
    V
      see
        N
          Marie
```

This leads to an astonishing conclusion: (28) cannot be the structure for OV languages, as the structures
cannot be linearized.

(29) VO and OV are not symmetrical: *stronger claim: we don't ever find mirror images.*
surface O V is 'derived'.
How exactly? *different paths to get to OV*

```
XP
NP
  X
  VP
    V
      Mary
        see
          Mary
```
VO and OV are not symmetrical: surface O V is "derived"

How exactly? different paths to get to OV

\[
\text{XP} \\
\text{NP} \quad \text{XP} \\
\text{N} \quad \text{VP} \\
| \quad | \\
\text{Mary} \quad \text{V} \quad \text{Mary} \\
| \\
\text{see}
\]

In languages with surface OV(-T) word order, objects must asymmetrically c-command the verb, i.e. have undergone a step of movement..

(30) Support:
In all known OV-T languages an object can be separated from the verb, i.e. undergo 'scrambling'.

(31) But: why would OV languages and VO languages be different? Can we unify them?
This in turn leads to a further question: is the V O order of languages like English actually the same, but obscured by movement of the Vp responsible for VO order? U20. (on the cartography of object positions, see Koopman (2015a)).

Note that this could in fact also be the case in English, if there is an additional rule of VP movement that moves the remnant vP higher than all objects (except wh), accounting for scope ambiguities (from day 1). This is in agreement with the overt scope principle (and with QR/type shifting).

(32) a. two volunteers greeted every producer Move QP to scope position
   b. \[ \[ \text{every producer}_j \] \[ \alpha \text{two volunteers greeted}_j \] \] scope (OK); Move \( \alpha \)
   c. \[ \alpha \text{two volunteers greeted}_j \] \[ \text{every producer}_j \] \[ \alpha \text{t}_j \] \] 2 volunteers will move up further

Simplified trees that represent the different scopal relations:

\[
\alpha \\
\text{two volunteers greeted}_t \quad \text{every producer}_j \quad \alpha \\
\text{...}_t \quad ...
\]

and surface scope: the universal Q is lower than the position where the subject QP takes scope.

---

8For discussion see Kayne (2009), for how counterexamples are apparent and fall under this, see Koopman (2015a) on Bambara.

9relevant literature: Beghelli and Stowell (1997), ...
In OV languages we expect unambiguous surface scope: in many cases this is reported to be case! (but. unless specific other conditions hold that obscure this further. (see Korean problem below. (or skip it and
get back to it once you have finished antisymmetry discussion.).

(33) a. ......................... Scope_{everyone(O)}...... Scope_{twoNs} ... vP
    b. Scope_{twoNsS} everyone_{everyone(O)} ...... two volunteersS everyoneO....

1.3.3 Where can scope positions be merged? Which readings can arise? Where form matters

(34) a. narrow syntax? with postsyntactic syntax
    b. or one syntax.

Koopman (2005): on Korean
* Lee (2004) shows that an accusative object that precedes a universal subject cannot take scope over a
subject QP (60), but a preceding PP can take scope either over or under the quantified subject (61). Lee
(2004)

(35) the view from the syntax:
where syntax/form determines what scope positions that are in principle available in a language can
actually lead to a convergent derivation, i.e. movement is blocked for particular reason so that the
derivation cannot converge.
If UG requires some element to be pronounced in a scope position, then movement must be available
to get you there for the derivation to converge.
It is possible that a given form prevents an output from converging! This shows these forms must
have an effect in the syntax, i.e. must in the narrow syntax.

=60. OSV

(36) John man-ul motun-salam-i salangha-ta.
    John FOCUS-ACC every-person-NOM love-DECL
    Everyone loves John (and no one else). (every> only ; * only>every)
    NB: order of focus and case morpheme!

(37) PF order: DP only ACC every (Nom)
    **Scope Hierarchy:**
    a. every(subject) > only(obj) > Acc(obj)
    b. *only(O)..... every(subject)

question: why can "only" only need to scope under the subject? See the contrast with (39) =61 PP-only S V
(38)  John hako-man motun-salam-i akswuhay-ss-ter.
John with-only every-person-NOM shake-hands-PAST-DECL
Everyone shook hands with only John’ or ‘John is the only one with whom everyone shook hands’.
(every>only, only>every)
NB: order of P and only.

In addition a OSV oder object which does not have an overt accusative case can narrow or wide scope
w.r.t. inverse scope
=64 OSV
(39)  John-man, motun-salam-i e, salanghata.
John-only every-person-NOM love
Only John, everyone loves e.
(Lee 2005:(26))
(40)  PF order: DP only every (Nom)
Scope Hierarchy:
  a. every(subject) > only(obj) > Acc(obj)
  b. only(O)..... every(subject)

a. Everyone loves John and no one else. (every>only)
b. John is the only one whom everyone loves (only>every)

(41)  DP -FOC-ACC: The linear order: only is merged in the Focus, it attracts the DP.
      Accusative is merged below only: it attracts the DP

Surface order (Acc is stranded):

If Acc is merged below strong quantified subject: then is must be the case that only MUST be merged
below every(subject in the surface order given in (39) where the DP-only-ACC is initial):
  a. every(subject) > only(obj) > Acc(obj)

(42)  What about when Acc is absent? Here the linear string is ambiguous.
  a. narrow scope (interpretation before fronting of object) OK like above
  b. wide scope of only possible:
     (i) only is merged in the left periphery higher than every(subject) (independently possible
      with PPs)
(ii) DP only results Spec movement, stranding acc,
(iii) DP only > everyoneS > t, Acce
(iv) pied-piping ACC is not possible: * [ DP acc ] only > everyoneS > t, Acce    * DP ACC
ONLY is not a possible Korean order
This forces ACC to delete (stranding and deletion, and deleting acc. (independently attested in Korean and Japanese).

What’s the point:
(43) → syntactic form (absence or presence of ACC must play a role in whether high scope of only is available.
   a. Acc must be there in the syntax.
   b. neither insertion, not word order done postyntactically
   c. if the overt scope principle is correct, we can account for this puzzle, as high merger of only
      must be excluded in the linear order DP only ACC order

1.3.4 Further discussion
(44) antisymmetry derives the fact that the complement must be a XP !
not:
\[
\text{VP} \\
\text{V} \quad \text{N} \\
\text{see} \quad \text{Marie}
\]

(45) a. ZP in (14) must be a maximal projection (have two nodes).
    this is a problem with bare phrase structure.
   b. How do you get a Spec? Segments do not c-command: Spec asymmetrically c-commands XP.
   c. how do you get an adjunct (Spec =adjunct )

Kayne continues and shows:
(46) a. Spec precedes heads
    Spec are initial across languages .. Therefore movement is to the left
   b. No distinction Spec=adjuncts
   c. Adjuncts invariably precede XP, right adjuncts are derived by leftward movement around the
      adjunct.
(47) What about right adjoined structures? – > these must be reanalyzed.

Quote from Kayne p. 132:
To a significant extent, the LCA based theory of syntax proposed here allows us to have the all
too infrequent pleasure of seeing the theory choose the analysis.

To sum up:
(48) a. Kayne: theoretical contribution– Bare phrase structure.
   b. put the focus on left right asymmetries and the importance of comparative syntax for theoretical
      linguistics.
   c. applies LAC to all kinds of puzzles known from the literature, and shows how it forces new
      analyses: empirical support.
   d. and introduces innovations...
What to remember:

(49) a. We have access to the output/linear order, and contexts in which these are fine
b. But we don’t know how the structures are built to yield these linear orders.
c. Focus on left right asymmetries: the research around Universal 20. (Go to section).

1.3.5 Chomsky, Bare Phrase Structure, 1995

(50) Derive properties of X-bar theory: LCA applies to pronounced elements only.

\[
\begin{array}{c}
\text{YP} \\
\overline{X} \\
\text{ZP}
\end{array}
\]

\[
\begin{array}{c}
\text{WP} \\
\overline{YP} \\
\overline{X} \\
\text{ZP}
\end{array}
\]

Labeling nodes? ('headedness')

\[
\begin{array}{c}
\text{X} \\
\text{Z}
\end{array}
\]

(51) Bar levels, relational notions: minimal and maximal, Muysken 83.
   a. minimal, maximal, (neither minimal nor maximal)

(52) Maximal projection: projection internal to which all lexical properties of a head are satisfied.

The Merge algorithm: (see ?)

(53) a. 1) SELECT: A and B, and MERGE them into a set, to form C.\(^{10}\)
   b. (2) LABEL Give C the label of either A or B.
   c. (3) Repeat as many times necessary.
   d. TRANSFER to interfaces: chunks get TRANSFERRED to the interfaces (SPELL OUT
      PHON) and INTERPRET
   e. LINEARIZE Hierarchical structures are linearized – at the PF interface
      (Chomsky: LCA: only pronounced elements need to be linearized).

(54) Merge leads to binary branching.

(55) Chomsky: Merge: set merge or pair merge.
    Kayne: antisymmetry (Spec H ComPL) and bare phrase structure; only one type of Merge.

(56) Since the introduction of Bare Phrase structure:
    Can we force movement (Internal Merge) rather than stipulating it (by epp features?? Focus on
    symmetry, and breaking symmetry. → Labeling algorithm (headedness):

(57) What is the structure of predicative nominal small clauses (John a boy):

   a. 

\[
\begin{array}{c}
\text{XP} \\
\text{YP} \\
\text{X} \\
\text{Y} \\
\text{...}
\end{array}
\]

\[\text{\textsuperscript{10}Kayne builds an ordered set Merge}\]
Moro: starts out as a symmetrical structure: cannot be linearized! Movement creates asymmetric c-command

Small clauses: (see also Moro (1997))

(58)  

a. John a boy
b. John BE <John> a boy
c. John BE <John> the teacher
d. John[T+BE ] <John> BE <John> the teacher
e. The teacher [ T+BE ] John          predicate inversion
f. the cause of the riot is the picture on the wall
g. the picture on the wall is the cause of the riot
2 Universal 20 and generalized Universal 20

from Greenberg (1963) to Cinque (2005b), and beyond.

Greenberg’s extensively studied\textsuperscript{12} Universal 20, formulated as follows in Cinque (2005b):

\begin{align*}
(59) \quad & \text{a. Prenominally:} \\
& \text{The order of demonstrative, numeral, and adjective (or any subset thereof) conforms to the} \\
& \text{order Dem Num A (basically uncontested).} \\
& \text{b. Postnominally} \\
& \text{The order of the same elements (or any subset thereof) conforms either to the order Dem Num} \\
& \text{A or to the order A Num Dem.}
\end{align*}

Only 14 out of the 4!=24 logically possible patterns are attested. These generalizations hold up in Cinque’s now extensive database of 1700 languages.test.terraling.com.

In the table below and throughout: 1, 2, 3, 4 represent an independently established syntactic/semantic(scopal) hierarchy where 1 c-commands 2, 2 c-commands 3, etc). For U20, this translates as 1= Dem, 2= Num, 3= Adj, and 4= N. with 1Dem > 2Num > 3 Adj > 4 N >.

<table>
<thead>
<tr>
<th>U20 patterns: Attested ✓; Un-attested 0</th>
<th>Neutral orders (no contrast)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1234 ✓</td>
<td>1324 ✓</td>
</tr>
<tr>
<td>1243 ✓</td>
<td>1342 ✓</td>
</tr>
<tr>
<td>1423 ✓</td>
<td>1432 ✓</td>
</tr>
<tr>
<td>4123 ✓</td>
<td>4132 ✓ or 0?</td>
</tr>
<tr>
<td>2134 0</td>
<td>2314 ✓</td>
</tr>
<tr>
<td>2143 0</td>
<td>2341 ✓</td>
</tr>
<tr>
<td>2413 0</td>
<td>2431 ✓</td>
</tr>
<tr>
<td>4213 0</td>
<td>4231 ✓</td>
</tr>
<tr>
<td>3124 0</td>
<td>3214 ✓</td>
</tr>
<tr>
<td>3142 0</td>
<td>3241 ✓</td>
</tr>
<tr>
<td>3412 ✓</td>
<td>3421 ✓</td>
</tr>
<tr>
<td>4312 ✓</td>
<td>4321 ✓</td>
</tr>
</tbody>
</table>

Cinque’s modeling:

\begin{align*}
(60) \quad & \text{a. Antisymmetry (Kayne 1994).} \\
& \text{b. An independently motivated fixed universal syntactic/semantic hierarchy:} \\
& \text{(i) a phrase, that} \\
& \text{(ii) must contain the lexical noun.}
\end{align*}

\textbf{Variation} (language internal or crosslinguistic) is due to the interaction with two different types of parameters


\textsuperscript{13}Frequency of patterns omitted, alternative orders not included/not known.
(i) **height-of-movement**: how high up in the hierarchy does the subtree containing the noun move (if at all)?
(This captures well-established empirical generalizations starting with Pollock (1989) study of the distribution of verbal forms in English and French.)

(ii) **pied-piping** parameters: determine if the nominal constituent can pied-pipe Adjectives, or Numerals etc. on its journey up into the hierarchy.

(61) Unattested patterns cannot be derived.

- U20 type patterns turn out to:
  - generalize to many hierarchical syntactic/semantic domains (i.e. given an independently motivated (universal) syntactic/semantic hierarchy, it turns out only certain linearization patterns are attested, and
  - show a fundamental *left right asymmetry* \(^{14,15}\)

Here is some space to try deriving some possible orders 1243, 2341, 3412, 4321, and some excluded ones 1324, 3214, using the little grammar above, to get the flavor of these derivations.

\(^{14}\) Cinque (2009), Abels and Neeleman (2009), Abels (2011), Koopman (2015b)....

\(^{15}\) I have no time to discuss Abels and Neelmann’s proposal, which is in essence a weaker theory (without (60-a) (which Kayne takes as an “axiom”)), all movement is leftward (a theorem) which needs to be derived), but right and left E merged Specifiers are allowed.
3 Adpositions, and prepositional Cs: Development of ideas, empirical support

..related to the lectures. (treatment of of and Ps more generally) The view from the syntax.
..related to infinitives and how to analyze to/ (Romance de/di, Dutch "te", German "zu"...). Related to the workshop talk.
...Please add arrows to the derivations, and do some practice to get a feel for the derivations.

3.1 What happened to of-insertion? Where is case? From LGB to Minimalist "Practice" and Antisymmetry.

General questions:

- Is Case part of syntax? Does Case project (is it a syntactic atom?)
- Do DPs have to move to Case positions? Agree and low spell out vs movement
- What is the relation between Case and adpositions (Ps)?
- Is there a distinction between narrow syntax (only meaningly elements are part of narrow syntax): and post- narrow syntax syntax?
  
  **Current view**: case is not part of the narrow syntax; but inserted post-syntactically. (coming from DM).
  What does this imply for meaningless elements like functional Ps?

- 'one syntax' view versus narrow syntax: Case is always a syntactic configuration (with movement to designated positions).

Structure of PPs:

- Are PPs (base generated constituents, or do they result from two separate E-merged pieces brought together by movement (I-merge)
  I will refer to this phenomenon as scattering. **How do we support this empirically.**

- distributional properties from Merge.
  Over time, in a series of papers: Kayne pursues these questions:
  First study: of -insertion: not a. but b.

    ![Diagram](image)

    Second extends it to prepositional complementizers de, di, to(c), and adpositions (d)

    ![Diagram](image)
• What do we get from this?
  – of-insertion
  – c-command out of PPs (Cinque 2006: chapter ? )
  – subject object asymmetries for infinitivals (c. )
  – extraposition of infinitivals
  – extraposition of that-clauses (Dutch, German, Yiddish)
  – P stranding (d)
  – PP extraposition and rightroof constraint (d)
  – PP scrambling
  – ?inverse linking out of PPs contained in DPs.
    Which are a strong argument for QR!May (1985)May (1988) I did not get to these

(62) Some senator in every city dispises it

• Technical questions: how to motivate the movement?
  same way as we motivate predicate inversion

(63) Ps can have an epp property (attracting "vP": checking the 'vP" shell they select for). (not as we are used to: V selects P, but P selects VP).

This can be deduced on the basis of linear order in the primary data.

3.2 (Kayne 1994: Chapter 8)

(Kayne 1994: Chapter 8 )
How to analyze postnominal possessors of John’s? of DP ‘s in (64) a cannot be a complement of N, it cannot be right adjoined because of the LCA.

Distribution:

(64) a. I have [ [ two pictures (of Mary) ] of John’s ]
    b. *I found the two pictures of John’s
    c. I found the two pictures of John’s that you took <two pictures of John’s> promotion analysis
      (Vergnaud 1974)

(65) a. I saw (the) two pictures of Mary
    b. I saw (*the) two pictures of Mary’s

• Kayne: of/ de cannot not form a E-merged constituent with DP’s in (67-a).

(66) a. [ NP [pP P [ DP ] ’s] ]

There must be a missing part, cannot be righadjoined (because of the LCA).

(67) a. [ NP [pP P [ DP ] ’s] .... ]
Indefinites: \( of \) is a P/C complementizer of an indefinite possessive relative\(^{16}\)

\[
\begin{tikzpicture}
  \node (DP) {DP};
  \node (two_pictures) [below left of=DP] {two pictures};
  \node (P_indef_C) [below of=two_pictures] {P(indef)/C};
  \node (of) [below of=P_indef_C] {of};
  \node (John) [right of=of] {John's};
  \node (t_John) [right of=John] {t_{John}};
  \node (two_pictures) [right of=John] {t_{two_pictures}};
  \node (t_John) [right of=two_pictures] {t_{two_pictures}};
  \draw (DP) -- (two_pictures);
  \draw (two_pictures) -- (P_indef_C);
  \draw (P_indef_C) -- (of);
  \draw (of) -- (John);
  \draw (John) -- (t_John);
  \draw (John) -- (two_pictures);

deletedtext

Basically similar to a tensed relative clause:

\[
\begin{tikzpicture}
  \node (DP) {DP};
  \node (D) [below left of=DP] {D};
  \node (the) [below of=D] {the};
  \node (two_pictures) [below of=the] {two pictures};
  \node (that) [below of=two_pictures] {that};
  \node (John) [right of=that] {John};
  \node (has) [below of=John] {has};
  \node (t_John) [right of=has] {t_{John}};
  \node (two_pictures) [right of=has] {t_{two_pictures}};
  \draw (DP) -- (the);
  \draw (the) -- (two_pictures);
  \draw (two_pictures) -- (that);
  \draw (that) -- (John);
  \draw (John) -- (has);
  \draw (has) -- (t_John);
  \draw (has) -- (two_pictures);
\end{tikzpicture}
\]

Definites:

\[
\begin{tikzpicture}
  \node (D_def) {D_{def}};
  \node (John) [below of=D_def] {John's};
  \node (t_John) [right of=John] {t_{John}};
  \node (two_pictures) [right of=John] {t_{two_pictures}};
  \draw (D_def) -- (John);
  \draw (John) -- (t_John);
  \draw (John) -- (two_pictures);
\end{tikzpicture}
\]

Where does the possessive interpretation come from? possessive SC nominal predicate.

(68) John HAS two pictures / two pictures BE AT John / John BE WITH 2 pictures

3.2.1 Filling in some history: How are these constructions traditionally/currently analyzed in Minimalist Accounts without antisymmetry?

I WILL SKIP THIS. READ IT AND FEEL FREE TO ASK ME QUESTIONS.

- Early work (pre Case theory pre 78): Phrase structure rules:

  Theory:
  - no VP internal subjects;
  - no vP shells (1983);

\(^{16}\)Also often called a linker: required in cases of predicate inversion (see among others den Dikken (2006)
No Spec, CP (1986), But S’ → COMP S and COMP -→ (wh-phrase/OP) C

(69) a. NP/DPs are born Caseless.
   b. Depending on the type of case, NPs/DPs must appear in specific configurations. Focus on subjects and objects!
   c. Case theory allowed a unification of movement types (A- movement and A’-movement), and was a big step forwards from theories with individual rules to modular theories.
   d. But ..it was not sufficient to account for languages like Icelandic which had oblique subjects,
   e. and ..it was not sufficient as a theory to account for the distribution of subjects (or objects).
      (There are many more subject/object positions than predicted. (Norwegian, Italian... ).
   f. It had little/nothing to say about PPs, or of-insertion.

(70) Movement (I-Merge) is a way to satisfy the Case filter.
   NP movement: A movement (Passive, raising to subject, raising to object, Unaccusative, ...) is Case driven. 17

   T ...... DP ...
   T ...... θ ...
   +Case T ........ -Case ...

   – Issues:
      is it N which needs Case, or NP (now DP?)
      Why?
      Where?

   – Case assignment configurations:
      -lexical categories are defined with features: +, - N, +, - V:
      and nominative case is a special case.

      (please fill in the following table):

      | +V | -V |
      | +N |   |
      | -N | V |

(71) a. destroy the forest
   b. for the forest
   c. destruction *(of) the forest
   d. proud *(of) the forest

   – Some categories assign case, some don’t.

(72) a. [+ N] categories do not assign case;
   b. [-N, +V ] acc iff external theta-role (Burzio’s generalization Burzio (1986))

17 Or partially case driven
– Insertion of \(P \text{ of} \) for (72) b of N/A (+ N categories do not assign case)
  
  Why: to pass the Case filter.
  
  when must of-insertion happen: before case filter.

(73)  
  a. D-structure: destruction the house
  b. S-structure: destruction \([PP \text{ of } \{ \text{the house } \}]\)
  c. A picture of Mary  
      
      Mary = theme.

– How does this installment of case theory account for (66-b):

(74)  
  a. (67-a)?
  b. (66-b)

(75)  
  two pictures \([ \text{of John's } [\text{ec} ] ]\)
  a. is the \text{of phrase} a complement of picture? show
  b. why indefinite?
  c. What is \text{of} doing here?
  d. What is [ec ] ? ellipsis? part of a movement chain ?
  e. Where does the possessor/ agent theta role come from?
  f. Paraphrases useful?

  (i) John has a book
  (ii) A book of John’s / a book that John has

• Case theory (version 2) Chomsky (1986)

(76)  
  a. NP/DPs are born Caseless.
  b. Case filter.

(77)  
  What changes, Case assignment: Structural case (nominative (finite verbs), accusative (little v), (?genitive, ?dative... )
  Inherent case (theta-related, idiomatic), 'assigned' under theta-role assignment
  conserved under A movement, but also disappears in nominalizations or middles (icelandic, Russian),...

• Case realization principle (Chomsky 1986) (to capture N/V complementation asymmetries) (Chomsky (1970), Kayne (1984) (V can govern over a clausal boundary, but N cannot)
  N, A, (P) assign inherent case –realized as 's or of.

• does not extend to the following

(78)  
  a. 2 pictures of John’s [ ec ]
  b. predicative of
      this idiot of a doctor
      (predicate inversion)

• Minimalist Program Chomsky (1995b)

From (Chomsky 2000:127) According to this conception, agreement (hence movement) is driven by uninterpretable features of the probe, which must be deleted for legibility With this shift in perspective, structural Case is demoted in significance. The Case Filter still functions indirectly in the manner of Vergnauds original proposal, to determine
the distribution of noun phrases. But what matters primarily are the probes, including ϕ-features [person, number, gender] of T, v. That reverses much of the recent history of inquiry into these topics and also brings out more clearly the question of why Case exists at all. The question arises still more sharply if matching is just identity, so that Case can never be attracted; operations are not induced by Case-checking requirements.

– -Ns/Ds are borne with case features, (or perhaps not as Gurmeet Kaur told us in her lecture) which need to be checked/valued for legibility reasons
  – DP external case– (external Probe (v, P, T/C))
  – DP internal case– (genitive, ’s) comes from DP internal probe:
    ‘–compatible with D/P and N as genitive probe*
  – Where? Post syntactic/ outside of narrow syntax?– if DM is right:
    Case morphemes are inserted (violated the extension condition) and spelled out postsyntactically.

– Questions: Are Ns borne with case features, which can be checked under Agree (Minimalist Practice)?
  Or do they DP acquire case in syntactic configurations?

– On Case in nanosyntax, read the papers by Caha, starting from Caha

3.3 P merging in the spine; From of-insertion to Prepositional complementizers, CP extraposition, PP extraposition, P-stranding, PP scrambling.

3.3.1 Literature Kayne (2000) Parameters and Universals

1. Chapter 12 (1997): The English complementizer of
    'This chapter demonstrates that it is entirely plausible that some varieties of English would have a complementizer of in cases of John should of left...
    Key: bring to bear on this ultimately UG question elements of the syntax of (at least) French, Italian, and Scandinavian.

    very relevant for lectures. Lecture 4 Negative indefinites (no child..), scope of negatives, particle constructions/verbal complexes, only DP, (even DP), every, and wh-in situ (which contrasts with negXPs, section 13.3.8)

3. Chapter 14: Prepositional Complementizers as attractors (Probus: 1999) (see below) de/di...IP.

    Important: some DP islands (picture of) follow from of merging with VP.
    – PP extraposition follows from Merge, in particular from where the P is merged.
    –explores Universals.

Further results–:
Why don’t P block c-command? They are not there at the relevant step in the derivation. A solution to the c-command out of PP-problem Cinque (2006a)

    Chapter 5: Prepositions as Probes. (causatives),
    Chapter 7 returns to P above VP (On some Ps that look VP internal: English of and French de).
    Chapter 9 considers Postpositions (and citic doubling)

3.3.2 Chapter 14: Prepositional Complementizers as attractors (Probus: 1999)

de/di.

(79) FR. Jean a essayé de chanter
IT. Gianni ha tentato di cantare
ENG. John has tried *to sing (but not of singing)
DU. Jan heeft geprobeerd te zingen

How are these strings put together?

(80) Standard view:

Jean a essayé [CP de PRO chanter ]
John has tried [ 'of' PRO sing.inf ]

(81) Kayne suggests that: 'the derivation involves more syntactic movement than usually thought':
de and Inf get together by I-merge, not by E-merge.

Merge P(de/di)

(82) a. diK [VP tries [PRO leave.inf ]]
   [PRO leave.inf diK [VP tries tPROleave.inf ]]
   b. de leave.inf tdi [VP tries tleave.inf ]
      [VP tries t[PROleave.inf ] de PRO leave.inf tde [ ttryleave.inf ]]

(83) a. de merges with the try VP.
b. de "probes" for inf VP → "Attracts" Merge infl VP in Spec, de.
c. de comes with a double de (P), head movement of de to P
d. P(rep) requires a VP in its Spec. motivation? word order? or Koopman (2005) ¹⁸

¹⁸ Relativized Minimality Proposal proposal made at a conference in Venice on the cartography of PPs, and definitely running through some later papers (On Dutch and West Ulster English, double passives in Samoan, and the dance of subject and objects (slides). See also Barbiers for earlier proposal that the P is a predicate taking a subject VP...
Argumentation. Evidence

1. *de/di* take an infinitive, not a finite clause

   - Case or not? → selection
   - Romance infinitives are nominal, finite verbs are not.

   (84) **Bare infinitives**
   
   a. Jean désire chanter
      John desires sing-\textbf{ING}

   (85) **De-infinitives:**
   
   a. Le désir *(de) chanter
      The desire* *(de) sing.INF
   b. Jean est désireux *(de) chanter
      John is desire.ADJ *(de) sing.INF

2. Distribution Bare infinitivals

   - In certain context (Italian, the infinitive can be combined with a definite article. 

   (86) il mangiare la carne il venerdì
      the eat.inf the meat the Friday

3. Bare infinitives do not occupy DP positions (recalls Koster t\textit{Koster} (1978), Stowell (1981))

   - bare infinitives cannot be the object of subcategorized Ps. (count on, insist on)

   (87) *Contavo su essere onesto
      count.I on be-ing honest
      (cf English I count on being honest, *I count on be honest *I count to be honest)

   - bare infinitives are not fully acceptable in pre-predicate position of a small clause

   (88) ?Jean considère aller au cinéma absurde
      John consider go-inf to-the movies absurd

4. Di/de infinitives..Italian/ French de infinitives/ di infinitives cannot occur in DP positions.

   - de/di infinitives infinitives cannot be the object of subcategorized Ps. (count on, insist on)

   (89) *Contavo su di essere onesto
      I count on di be-ing honest
      (cf English I count on being honest, *I count on be honest *I count on to be honest)

   - In Italian: cannot be a subject (Cinque 1990; Rizzi 1988) (movement away does not help.)

   (90) *Di cercar.lo comporta dei rischi
      di look for inf.him implies some risks

   - *de infinitives are sharply excluded from the pre-predicate position of small clause

   (91) *Jean considère d’ aller au cinéma absurde
      *John considers to go-inf to-the movies absurd
      John considers it absurd to go to the movies

26
Instead the small clause predicate must precede the de infinitival in French/Italian: (*obligatory extraposition*)

(92) jean considère (complètement) absurde d’aller au cinéma absurde
    John consider (completely) absurd de go-inf to-the movies absurd

Merge P: and I-merge α with P.

Draw the output tree

IMPORTANT:
Extraposition of the infinitival follows from the derivation: no need for head movement, complex verb formation, or PF constraints: heavy material after light, PF movement.
This is a super minimalist account: the restrictions fall out from Merge.

How would this extend to extraposition?

(93) E possibili *(di) capire quello domande
    is possible *(di) understand this question

(94) Start from
    e [(comprendre quello domande) possibile. Then Merge K, merge di and move remnant

5. For further analysis of the distributional properties outlined above, French Italian differences, extension to English to and discussion: read the paper!

6. Conclusion: bare IP moves to licensing position:
    de [ ......] INF

27
7. Further question: what part of the spine can P...K merge with? Subject vs object

(95) If P..INF always requires remnant to move to its spec you cannot derive preverbal order of de/di- complements, unless you have formed the [de complement ] at an earlier point in the derivation, and you subsequently move the de complement.

3.4 Chapter 15. A note on Prepositions, Complementizers and Word Order Universals

- Important: some DP islands (picture of ) follow from of merging not within DP but with VP.
- PP extraposition follows from Merge P with VP. - CP extraposition follows from that with VP. but how is this different from 1994? is this one of the sources for CP extraposition? – explores Universals.

- of can be merged D/C, and end up DP internally.

(96) I admired a picture of John

a. admiring [ John a picture ] John of [ John a picture ]

Where else can of be merged?

PP extraposition:

(97) I admired [ John a picture ] yesterday

• Merge of with [VP ]

(98) a. admire [ John a picture ] yesterday
b. of John K [ admiring John a picture yesterday ]
c. [ admiring John a picture yesterday ] of John

• structural ambiguity for

(99) a. of is merged DP internally: I admired [ a picture of John ]
b. of can be merged with VP; DP externally: I admired [ a picture of John ]

• relevance for the analysis of:

(100) who did you admire a picture of

Bach and Horn (1976); Chomsky (1977): Readjustment rule [admire a picture of] readjusts: [ admire a picture/ of ] i.e. PP extraposition feeds P-strandinf

(101) Who was Bill admiring/?destroying a picture of?
• Kayne: Preposition stranding is not allowed from a constituent 'D N of XP'

Subject Island: (i) No VP attracted since "of DP" precedes the VP: (i.e. no way to get of fully outside a DP constituent.)

(102) a. A picture of John just arrived in the mail
    b. *Tell me who a picture of t just arrived in the mail

• Extraposition of PP and relative clauses

(103) they were showing a picture of John to me
    a. ... showing [John a picture ] to me
    b. ... of John K [ showing John a picture to me ]
    c. ...[ showing John a picture to me ] of John

(104) who did they show a picture to me of

(105) a picture arrived in the mail of John
    a. [ John a picture arrived ]
    b. of John [ John a picture arrived ]
    c. [ John a picture arrived ] of John

(106) a. a picture arrived in the mail of John
    b. *a picture arrived of John in the mail

Relative that that must come into the derivation above VP:

(107) they were showing [ a picture I like ] to me
    a. ... that I like K [ showing [a picture t ] to me
    b. ...[ showing [ a picture t to me [that [ I like K ]

• Much more to say, but:

  – of-insertion of can be merged with DP– [Nominal predicate ] of DP/ [Nominal predicate ] of DP’s of can be merged with vP – [Verbal predicate ] of DP of can be merged with IP (but will attract nominal predicate only)
  – c-command out of PPs (Cinque 2006c:chapter ? )
  – subject/object asymmetries for P-infinitivals (Itaalian, Dutch)
  – extraposition of P-infinitival
  – extraposition of that-clauses (Dutch, German,...)
  – PP extraposition and rightroof constraint (see paper)
  – PP scrambling (OV languages)
  – (?) inverse linking out of PPs contained in DPs.
    Which are a strong argument for QR!May (1985)May (1988)

(108) Some senator in every city, dispises it,

• Technical questions: how to motivate the movement?

  same way as we motivate predicate inversion
Ps can have an epp property (attracting 'vP': checking the 'vP' shell they select for). (not V selects P but P selects V).
of has an epp property (nominal predicate)
of can have a epp proprey (verbal predicate) (English).

This can be deduced on the basis of linear order in the primary data.
4 14-14 Thursday: Overt versus covert movement

This handout mostly concerns the role of remnant VP movements. It is less about PPs. Kayne (1998), Kayne (2000).

Abstract. In a number of cases (involving, e.g., negation, only, reverse scope of some and every, ACD) where covert (LF) phrasal movement has been postulated, it is possible and advantageous to dispense with covert movement (including feature raising) and replace it with a combination of overt movements of phonetically realized phrases.

The strongest interpretation of this conclusion is that the cases explicitly considered are typical. UG leaves no choice: Scope must be expressed hierarchically, there are no covert LF phrasal movements permitted by UG, and neither can the effect of covert phrasal movement be achieved by feature raising. Scope reflects the interaction of merger and overt movement.

Structure of the paper:
1. introduction
2. Negation
   2.1. Scandinavian
   2.2. English
   2.3. More complex VPs
   2.4. no vs some
   2.5. wide scope negation
2.6. Subject-object asymmetry
3. Only
   3.1. similarities to negation
   3.2. An important difference between ’only’ and some negation
   3.3. Attraction by ’only’
   3.4. Attraction by Neg+0 and ’not’
   3.5. More on wide scope
   3.6. Subject and pre-subject ’only’ and negation
4.0. Other elements related to ’only’ and negation
   4.1. ’even’
   4.2. ’too’
   4.3. Focus
   4.4. Universal Grammar
   4.5. Heavy NP shift
   4.6. German ’nur’ only.
   4.7. Scandinavian negation
   4.8. Covert movement
   4.9. German
   4.10 Scope ambiguities with two quantifiers
   4.11 A digression on particles
   4.12 ACD
5. Conclusion
examples in main text : 229
footnotes: 127
references: 8 pages
(languages: English, Scandinavian, German/dutch, Romance, ..)
4.1 Introduction

Setting the stage:

Klima (1964:285): (=1)

(110) I will force you to marry no one.
   a. I will force you to not marry anyone
   b. There is noone I will force you to marry, I will not force you to marry anyone

Kayne (81), subjunctives

(111) She has requested that they read not a single linguistics book.
   a. narrow scope
   b. wide scope (In all these years, ...)

LF (phrasal) movement, not not incorporation/movement.

(112) a. I will force you to NOONE NEG marry no one.
   b. I will NOONE NEG force you to marry no one

Subject object asymmetries: ECP effects/ that/t effects =3

(113) She has requested that not a single student read our book.
   a. *She has [ NOT A SINGLE STUDENT ] NEG requested that not a single student read our book.

Not covert, but rather overt (pre-Spellout) movement.

(114) Narrow scope:
   a. [ noone NEG to marry noone ] -> VP movement
   b. to marry [ noone ]

(115) wide scope: noone is in the force clause:
   a. [ NegP noone [ Neg force you to marry noone ] ] -> VP movement
   b. [ force you to marry noone ] noone NEG

Ok, but how to support this?

- Insights from Scandinavian (negation, and negative indefinites)'
  (overt movement masked by V-second (past negation) in root clauses, no remnant VP movement around negative objects)

- informs English (overt movement masked by V movement past negation; and by remnant VP movement for object/ postVP indefinites)
  verb particle constructions (particle climbing)

4.2 Norwegian

Norwegian, Christensens (1986) (Svenonius (2002) analysis of ingen, which is like English no.
ike... noen is like not ..any
noen= some

32
(16) Jon leser ingen romaner.
John reads no books
'John reads no books.'

(Kayne 1998/2000:224)

(17) Jon leser ikke noen romaner.
John doesn’t read any novels

(18) Jon har lest ingen romaner.
John has read no novels
Intended: 'John has read no novels.' (can in fact also mean: Joh has read zero novels: the sentence is not negative)

(19) a. *Dette er en student som leser ingen romaner.
   this is a student that reads no novels
b. Dette er en student som ikke leser noen romaner.
   this is a student that not reads any novels

(20) a. *Dette er en student som har lest ingen romaner.
   this is a student that has read no novels
b. Dette er en student som ikke har lest noen romaner.
   this is a student that not reads any novels

(21) Sentential negation ikke precedes the finite verb leser.
    ingen romaner must appear in the position in which negation appears.

(22) Shifted negative object depends on the position of the main V(P).
In this respect it is like object shift Holmberg (1986)Holmberg (1999)
   (which bring us to cyclic linearization: Fox and Pesetsky (2004), Fox and Pesetsky (2005) and the articles in that volume)

4.2.1 A bit more on the distribution of negative indefinites

Where else do negative indefinites occur? Anywhere higher than ... ikke T ...

(23) Jon leser ingen romaner.
John reads no novels
'John doesn’t read novels.'

NB. This sentence is negative (a tag will be positive)

(24) Ingen student leser disse romanene
No student reads these novels.DEF
No student reads these novels.

(25) ingenten har Jon lest
nothing has John read
Nothing has John read

In written registers of Norwegian, the following forms are possible, but they don’t occur in spoken registers of Norwegian—though these forms occur throughout Scandinavian: See Engels (2012)for microvariation in Scandinavian.

Written Norwegian ✓, spoken Norwegian *.

(26) Jon har ingen romaner lest
John has no novels read
'John has read no novels/ John hasn’t read any novels
Neg indefinites that express sentential negation, must be in the T region at spell out. This is OK for subjects, or topics, and preverbal negative adverbs, but not for objects,

a. *ingen N must move to Spec, NegP, or above
b. Neg precedes the finite verb/ or verb cluster;
c. unless the aux or lexical verb moves to T and C (past negation).

→ Negative objects can only be postverbal if the lexical V has moved past negation.

### 4.3 English

English vs Norwegian

a. John reads no novels. (=17)
b. John has read no novels. (=18)
c. *John has no novels read

V movement past Neg is different in English.
V to T movement: highest Aux, or modal

a. John is no Einstein/ John isn’t an Einstein
b. *John became no Einstein/John didn’t become an Einstein

a. John has no car
b. John owns no car more emphatic

with emphasis elsewhere:

(28) The only person who has/owns no car this year is John.
(133) a. If V to T past negation: no NP is fine
b. If NP move past negation. (subjects, objects): [no NP] is fine
c. Hyp: no- phrases must raise in English, but VP movement around the object obscures this

John reads no novels.

(135) a. English: *V - to- T past negation and VP movement around negative indefinite objects (no-NPs)
b. Scandinavian: V to T to to C(root) movement, no VP movement around negative indefinite objects

→ negative indefinites cannot be postverbal, unless V to T to C

### 4.4 More complex VPs

The role Particles and small clauses play (complex predicate formation).

(31) John invited no strangers.
(32) John invited no strangers in.

Derivation of (31) yields V Part DP order

b. John no strangers invited no strangers in ] → Move VP
c. John [invited no strangers in ] no strangers

Derivation of (32): yields V DP Part order

a. John invited [ no strangers in ] → (particle preposing)
b. [ in [ invited [ no stranger ] ]
c. Move to NegP, move remnant VP

Does the order NegO Part or Part O matter for interpretation? *only in case particle climbing is blocked*

(140) a. I will force you to turn down no one. (=57) OK, narrow scope, wide scope
    b. I will force you to turn no one down. (=58) OK: narrow scope, ??wide scope

(in all these years, ..they have forced us... (fnt 32: on some speakers don’t seem to find a contrast...)

(141) a. They have forced us to turn no one down . → (*particle preposing to matrix: no climbing out of object control verbs)
    b. [down [force us to turn out no one ] → Move noone to NegP
    c. no one [down [force us to turn t ] → Move remnant
    d. force us to turn [ noone [ down → No wide scope because the order would require an illicit step of part climbing

Support for movement from Condition C:

*footnote: 35* Note that in (i) it seems possible for he to take John as antecedent:

(142) (i) In all these years, shes requested that he revise none/not a single one of the articles that John has written for her journal

This supports the idea that, in the wide-scope reading, the NegDP (none/not a single one of the articles that John has written for her journal) moves into the matrix, past the embedded subject.

4.5 Subject Object asymmetries

How could you ever have a derivation where not a single student is physically pronounced in the NegP of the request clause?

The following should be a failing derivation:

(143) (65) She has requested that not a single student read our book.
    read our book [ requested that not a single student read our book
    not a single students [ read our book [ requested that

(144) Neg indefinites raise to Spec, NegP in the overt syntax.

4.6 Scandinavian negation

To judge by some initial data, it seems that one does not find ambiguities of the (194) sort in Scandinavian. More specifically for our purposes, if the negative phrase moves overtly to a landing site within the infinitival (recall that in Scandinavian there is no subsequent VP-preposing), then only the narrow scope reading is available ((195) from Swedish, (196) from Icelandic):102

(145) Hon har bett oss att inga böcker läsa. (=195)
    she has asked us to no books read
    She has asked us not to read any books.

Icelandic has V movement in the infinitival

(146) Pabbi hennar mun neydha hana til adh giftast engum. (=196)
    father her will force her till to marry no one
Her father will force her not to marry anyone.

True for Dutch as well: a negative DP never takes scope higher than where it is pronounced.

(147) → scope differences between languages with negative indefinites are not due to a choice of overt vs covert movement they depend on the syntactic movement inventories.

4.7 Covert movement

In Chomsky (1995:265), covert (LF-) movement is limited to the raising of features.

(148) a. Why can covert feature movement not alter the scope of a negative (=197)) phrase that has been moved overtly to some Spec,NegP?

b. Why must negative phrases (of the English sort) always move overtly to some Spec,NegP? (cf. (165a)) That is, why can negative scope not be set covertly (low spell out)

Taken jointly, these two questions suggest a strong limitation on the power of covert feature-movement. A joint answer would then be either of the following:103

(149) a. Covert feature-movement does not exist. (=198)

b. Covert feature-movement is subject to locality restrictions at least as strong as those to which overt head-movement is subject.

(150) wh-in situ In addition, it must also be the case that movement of an empty operator of the sort proposed by Watanabe (1992) can neither alter scope already set by overt movement nor establish scope, as far as negative phrases (of the English sort) are concerned.

West Flemish (only narrow scope)– English (wide scope possible) contrast:

(151) (199) da Jan hee willen geen vlees eten
that J has want(ed) no meat (to)eat
only narrow scope available: understand why

(152) John wanted to eat no meat/none of the meat. (=200) (due to masking VP movement in English)

4.7.1 on the difference with wh in situ

Haegeman & van Riemsdijk (1986:451) observe that multiple wh-questions act differently from negation (where all negative phrases must raise): why can wh- question be in situ and lead to a pair list reading?

(153) Possible: ... *multiple wh-questions can have a derivation of the sort proposed by Watanabe (1992). The lower wh-phrase in (201) would contain an empty operator that would move in the overt syntax (as a phrase, not as a head). This is plausible, because Haegeman & van Riemsdijk (p. 450) have shown that overt extraction from within an infinitival clause of the relevant type is possible.

(154) why not with a negative QP?

(155) (202) where, somewhere, anywhere, nowhere, everywhere, elsewhere
(203) how, somehow, anyhow, nohow

The idea, then, would be that the empty operator, being of the series some/wny/no/every, could not cooccur with one of those, i.e., the empty operator could be associated with (form a constituent with) where,107
but not with nowhere, as desired.

### 4.8 4.10 Scope ambiguities with two quantifiers

German versus English:

(156) weil jemand versucht hat [jeden reinzulegen] (=209)

since someone tried has everyone to-cheat

unambiguous.

(157) (since) someone has tried to cheat everyone (=210)

possible reading: everyone > someone

(158) \[D_{istP}\] Everyone [someone has tried to cheat t] \(\rightarrow\) remnant VP fronting.

As German (OV) lacks remnant-VP fronting; \(\rightarrow\) in German *jeden* 'everyone' is unambiguously within the infinitival

since there is no covert QR, and since the subject of *try* is not under the scope of the embedded object at any point in the derivation, there cannot be inverse scope.

in English remnant VP movement obscure this!.

German does allow some contexts in which *jeden* can scope over someone: Here German and English behave in the same way:

(159) a. weil irgendjemand auf jeden gespannt ist (=211)

since someone for everyone anxious is

b. someone is anxious about everybody

\(\rightarrow\) *someone* is below *everybody* which in the scope position, at some point in the derivation.

about [ everybody [ someone is anxious. ]]

(160) Williams 1986: widescope is best in final position. (setting aside sentence final adjuncts)\(^{19}\)

(161) footnote 114:

Similarly for: (i) A different student called up every professor.

(ii) A different student called every professor up.

The multiple student reading (cf. Beghelli & Stowell 1997, Johnson 1997) seems much more accessible in (i) than in (ii). Beghelli & Stowell discuss the fact that in (iii) there is a natural reading with one book having scope over negation but under every boy:

(iii) Every boy didn't read one book.

The following suggest that in such readings the indefinite must move overtly to their Spec,ShareP:

(iv) Every student didn't look up one/some word.

(v) ?Every student didn't look one/some word up.

### 5 Burnett, Koopman, and Tagliamonte (2018b) Structural explanations in syntactic variation: The evolution of English negative and polarity indefinites

Looked at variation *no* and *any* in a corpus constructed for sociolinguistic research (Sali Tagliamonte): Toronto English corpus (Sali Tagliamonte), using the insights coming from Scandinavian. We coded the

\(^{19}\) also true for stranding Ps
utterances according to syntactic structures, with the insights coming from the distribution in Scandinavian and Kayne's paper:

(162) a. Higher than VP
    b. pragmatic widening no/any (turns out a property of the higher domain)
    c. Lower than VP

<table>
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<th>Construction Type</th>
<th>Syntactic Domain</th>
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<td>Lower than VP</td>
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<td>NPI</td>
<td>%Neg-Q</td>
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<td>other verb</td>
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<tr>
<td>Total n</td>
<td>568</td>
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<td>35</td>
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</table>

"Table 4 shows that while No and Not...any appear close to the same frequency in the corpus (Neg-Q (603); NPI (553)), the variants are almost categorically associated with different syntactic positions: no appears in the higher syntactic domain 95.3% of the time, while any appears in the higher syntactic domain at most 6.3% of the time. Moreover, it now becomes clear that the lexical constructions that have been considered a defining condition on No/Not...any variation are an epiphenomenon of the underlying syntactic domain. Indeed, for the verb have and lexical verbs (shaded in the table) the contrast is virtually categorical."

We then constructed a binomial mixed-effect regression model using the lme4 package in R (Bates, Mächler, Bolker,& Walker, 2015; R Core Team, 2016). We included speaker as a random effect, and as fixed effects the three-way predictor for syntactic domain, verb, as well as two sociolinguistic factors (age and gender).1

See Table 6 confirms the enormous effect of the syntactic position of the indefinite, even in the small area of the grammar where optionality reigns. Speaker gender does not significantly condition Neg-Q/NPI variation; however, it is now apparent that the middle-aged individuals have a heightened use of Neg-Q.
Examining 35 examples of negative quantifiers below VP more closely suggests that we may not be dealing with true optionality.

**HK: following VP does not mean below VP.**

(163) What do you think the difference is between the English grammars that Kayne describes and Toronto English C (TEC)?

For speakers that have (only) the TE grammar what would the predictions be w.r.t the availability of wide scope (115) or narrow scope (114). (i.e. what in Kayne’s analysis allows wide scope? What is the role of VP movement around negation in this respect?)

---

**TABLE 6. Binomial mixed-effect regression model predicting ‘any’ negation.**

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<th>BIC</th>
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<td>12% <strong>any negation</strong></td>
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<td>Number of individuals</td>
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6 When the syntax is not as it seems: On Interface Mismatches

The following sections are part of the invited lecture presented at the form meaning workshop on August 3. I have not adjusted the sections/subsections/subsections structure. This means that in the table of contents sections 5 to 12 are all part of the same talk.

7 Introduction

- To what extent can the syntax semantics and syntax phonology interfaces be taken to be direct?

  (164) a. Is there postsyntactic structure building or structure manipulation?
    b. Is QR (low spell out of a quantified phrase) justified?

- The field seems to be (almost) uniformly in agreement that there must be postsyntactic structure building, and that QR (low spell out of a quantified phrase) is the correct way to interpret (certain) scopal interactions.

- More specifically: can we distinguish empirically between the two hypotheses below: in particular, how far can we get with overt movement only?
  
  - Within 'One single computational engine/onesyntax' approaches, QR/scope, and phonology/spell out.
    
    1. A syntactic object can be interpreted higher than where it is pronounced in the syntax. (Fox and Nissenbaum (1999) Extrapolation and scope. QR) 
      standard assumption... hardly challenged

    2. Kayne (1998): "cases of covert phrasal movement can be advantageously rethought in terms of overt movement"
      \( \rightarrow \) LF and PF Interpretation are maximally informative about the sequence of Merge

  (165) **Overt Scope Principle**
  
  A syntactic object cannot be interpreted higher than where it is pronounced in the syntax.

  \( \rightarrow \) reconstruction (cyclic interpretation) is OK, but no QR (or spell out of low copy)

- today’s talk\(^\text{20}\) is a case study of an (apparent) form meaning mismatch in a particular English construction (both syntax semantic and syntax phonology), and how it informs these questions, or questions about the architecture of the model, and ultimately what kind of syntax we should pursue.

\(^{20}\)A further elaborates of a squib Koopman (2017). Thanks to audiences at UCLA, Humbold University, University of Vienna, and University of Venice where various aspects of this work were presented.
– General questions about architecture of UG. Narrow syntax or not?
Head movement or not? Are inflected lexical items with (ordered) feature bundles allowed?
Antisymmetry or not? Postsyntactic movements/reordering or not?
How do we decide/evaluate different frameworks?

– Results from formal language theory: theories must fall within mildly context sensitive grammars.
(see Joshi (1985)).
As Stabler (2011) and his colleagues have shown frameworks with antisymmetry or without,
with head movement or without, with right and left adjunction all fall within the class of Mildly
Context sensitive grammars. This means that questions of implementation cannot decide between
frameworks.

(166) syntax we need is the syntax that is appropriate for the interfaces, and that yields
insights into language variation.
Important role of comparative syntax. Insights into English can come from properties
of Japanese.

Price to pay (for us linguist): longer syntactic derivations, and working them out. This does not
mean increased complexity (Stabler (2011). but what this means for the future is that syntacticians need to work with computational linguists to
build apps that we can use to help us figure out the exact empirical predictions that the derivations
make.

8 A scope puzzle from English: What we can learn from an
idiosyncratic construction.

A particular type of mismatch between the syntax and the semantics can be found in sentences with can’t

(167) I cannot seem to get away from verbal complexes
  a. Paraphrasable as:
    It seems that I cannot get away from verbal complexes
    It seems that I am unable to get away from verbal complexes.
  b. Not as:
    It cannot seem that I get away from verbal complexes.
    *I am unable to seem to get any work done on the bus

(168) The syntactic structure of (167) seems to be rather straightforward. a simplified tree:
  a.

\[
\begin{align*}
\text{TP} & \quad \text{DP}_i \\
\text{T} & \quad \text{Pol} \\
\text{can} & \quad \text{not} \\
\text{VP} & \quad \text{can} \\
\text{seem} & \quad \text{TP} \\
\text{DP}_i & \quad \text{to} \\
\end{align*}
\]
Can appears to be in T, not in Pol, and seem in the VP combining with a to-infinitival complement, cannot > seem > to get away, with the subject raising out of the infinitival complement.

By undoing/blocking raising to subject, we expect to find the paraphrase in (167-b). But instead we find (167-a).

(169) → Syntax and Semantics Mismatch!

As I will show below: the syntax is not as simple as it seems

8.1 When does this scope mismatch occur?

3 necessary ingredients.

- Raising to subject verb: seem (but not appear).

(170) a. I can no longer seem to get away from verbal complexes
    b. # I can no longer appear to get away from verbal complexes

- A downward entailing expression E_{DE}.

(171) a. none can seem to forget about the vote
    b. Few can seem to fathom how he could be so popular. [Jacobson 2006, ex. 9]
    c. At most five people can seem to understand this.
    d. John can never seem to speak in full sentences. [Jacobson 2006, ex. 7]
    e. I just bought this lens, and I can rarely seem to get a clear picture.
    f. Only John can seem to stomach watching reruns of the 6th game of the 1986 Series. [Jacobson 2006, ex. 10]

but: (unless with Pol focus)

(172) I can seem to get work done on the bus

- The ability modal can

- Scope reversal puzzle: (following Homer (2011). (E_{DE} refers to downward entailing expression, and CAN to an abstract (ability) modal.)

(173) a. Surface order (ignoring V-to-T movement):
     E_{DE} . . . can . . . seem
    b. Scopal relations: SEEM > E_{DE} > CAN

8.2 Previous accounts

- No syntax semantics mismatch:

(174) Syntax: SEEM > E_{DE} > CAN Langendoen (1970)
     cannot raises in subject raising environments.

(175) Syntax: E_{DE} > can > seem Jacobson (2006) scope mismatch is an illusion\textsuperscript{21}

- Syntax semantics mismatch: Homer (2011)

\textsuperscript{21}Tries to assign meanings to the pieces in such a way that the surface scope is the semantic scope
(176) a. Syntax: $E_{DE} > \text{can} > \text{seem}$
    b. LF: seem is a PPI that must raise out of the scope of downward entailing expressions. This movement is blocked by CP.

8.3 The syntax is not what it seems... not: $E_{DE} > \text{can} > \text{seem}$

- Late spell out, one syntax, LCA, direct interface – Surface order must be the output of the syntactic derivation.
- Syntactic hierarchy represents scope (c-command).

\[
\text{Syntax: } \text{seem} > E_{DE} > \text{can} > V
\]

But how can syntax derive the linear order from this hierarchy?

- Insights from German/Dutch/Hungarian "verbal complexes" "complex verb formation" Koopman and Szabolcsi (2000) what we see here is basically a verbal complex in English.

8.4 Structure of the main argument

1. Building up the analysis: the cannot seem to construction

   - Motivating the syntactic hierarchy
     - Two arguments: the syntactic order of Merge must be $\text{SEEM} > E_{DE} > \text{CAN}$
     - Not: CAN be syntactic, but MUST be syntactic.

   - The problem: what the syntactic derivation must achieve—mismatches!

   from an underlying order of (e-) merge in (177-a), with numbers referring to c-command (1 c-commands 2, 2 c-commands 3, etc.) we must derive a surface structure in which 3 (not 1) combines with T, and 2 with pol, when raising to subject occurs.

(177) a. $\text{SEEM1..} > E_{de2..} > \text{CAN3...}$
   \hspace{1cm} It seems I cannot get away from verbal complexes

   b. $\text{CAN3} \text{T} > E_{de2} \text{POL} > \text{SEEM1}$
   \hspace{1cm} I cannot seem to get away from verbal complexes

   - No new tools: A crucial insight for the derivation comes from Dutch and German verb clusters—"step of complex verb formation". Extend the analysis in Koopman and Szabolcsi (2000) to English. Verbal complexes: (not part of standard English syntax! after all it is a Germanic family trait. English syntax is surface opaque)

   - Building up the details of the derivation...

     Analytical ingredients: seem, to, DE, can, V/v, complex verb formation, raising to subject, idioms.

2. The analysis will yield a more refined understanding of raising to subject (in seem constructions)

3. it will account for why several factors must hold at the same time for convergence (DE and CAN and subject raising each have a role to play.

4. solution to two other problems:

   seem but not appear
   no experiencer intervention

\footnote{For remnant VP movement in English and the interaction with verb particles see Kayne (1998) and refs cited therein}

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5. **(Apparent) Syntax- Phonology mismatches** represent converging syntactic derivations in the proposed analysis. (Possible) insights from English into a problem for German: a syntactic account for 'displaced' zu in certain verbal complexes Saltzmann (2016). No need for postsyntactic local dislocation for this case. (see in particular Hinterhölzl (1999), and for Huave, see Koopman (2018)).

9 A verbal complex in English

Recall: the paraphrases below show the following scopal relations: seem > E<sub>DE</sub> > can>VP.

(178) a. They could not seem to figure the syntax out  
   b. *Paraphrasable as: It seems that they could not figure the syntax out

9.1 Two arguments that **can** merges with the lexical "VP"

(179) (... seem to) > can > VP

1. Textbook arguments for raising of can not (cooccurring with subject raising):
   - The merge order appears when seem takes a that clause.
     (180) a. They cannot seem to figure the syntax out  
     b. *Paraphrasable as: It seems that they cannot figure the syntax out

   → factoring out seem to always yields a perfectly well-formed string, keeping the meaning constant.

   - Idioms: can VP or cannot VP can be idiomatic, but there are no idioms of the type can seem to V: ((Langendoen 1970:2 and 3)).
     (181) a. Abe can’t (seem to) afford paying the rent  
     b. Harry can’t (seem to) help falling asleep  
     c. Sam couldn’t (seem to) stand the sound of jackhammers underneath his bedroom window  
     d. Tevye couldn’t (seem to) tell the difference between right and left

   can afford is an idiom:
     (182) a. Abe can afford paying the rent  
     b. *Abe affords paying the rent  
     c. *Abe doesn’t afford paying the rent

   (183) It seems that Abe [can afford ] paying rent

   - What do the idiom data show?
     Depends on the theory of "possible idioms" Koopman and Sportiche (1991), Sportiche (2005):
     (184) Possible idioms must be a connected and uninterrupted sequence of heads. 
     Specifiers can be free positions : 
     a. to pull one’s leg  
     b. CAN > afford

     Must be met at some point in the derivation: → E-Merge

     (185) → relative order of E-merge must be: seem > can > V
• Conclusion: a (syntactic) movement account is required, with (NEG) CAN taking a bare VP complement, as modals usually do, and seem to merging with the result.
  - Wait... but why does this show can always merges locally with afford in the syntax? Why cannot idiom composition happen at LF? I take it I don’t have to argue for (184). i.e. alternative analysis will have to mimic this raising syntax.

2. Lifting aspectual restrictions: A second argument further confirms the relative order of E-merge of seem to and can, as seem to > DE > can.
   The cannot seem to construction is exempt from an aspectual restriction that present tense seem otherwise always imposes: the main embedded predicate must be stative, (or receive a non-episodic reading), with the exception of the can’t seem to construction (Homer (2011)).

   (186)   a. *They seem to sleep  (187)   a. *I seem to swim faster
   b. They cannot seem to sleep   b. I cannot seem to swim faster

   This directly follows if sleep is directly embedded under CAN, as I just showed it must be. Then CAN is the main predicate that should satisfy the aspectual restrictions of seem by virtue of the structure (which it does).

   (188)   a. ...seem to THEY NOT CAN sleep
   b. ...seem to I NOT CAN swim the butterfly

   Although can may not surface in infinitivals, be able to can do so (and fails to climb).

   (189)   a. They seem unable to sleep / They seem to be unable to sleep/ *they are unable to seem to sleep
   b. They seem unable to sing / They seems to be unable to sing
   c. They cannot seem to not can sing

• Conclusion:
  the cannot seem to construction must be derived in the syntax, as Langendoen proposed in (1970). must or can?
  (see 10.1 for further discussion/possible alternatives of aspectual and temporal restrictions)

   (190)   (..seem) >CAN>VP.

9.2 The syntactic derivation –A verbal complex, pied-piping, remnant movement, and subject raising

in addition to raising to subject:

• the structure in (191-a) shows the order of E-merge underlying (191-b)

   (191)   a. It seems that they can no longer afford paying the rent
   b. derivation to be developed
      ... seem to THEY NEG CAN afford paying the rent

   Problem: Given that only constituents can move, how can the relevant chunk of structure, with the subject, and no longer can move out of the infinitival complement?

   (192)   (i) Must be phrasal movement (or phrasal movements)
   (ii) Must be remnant movement can we further restrict the derivation?
Ingredients: lexical properties, Merge (E and I) (locality of selection), attract closest, extension condition

- Complex verb formation (Germanic) can, and seem must form a complex verb. can attracts a subpart of its complement, which can trigger pied-piping in English.
- The role of to in the syntactic derivation.. (It attracts the vP and creates the relevant remnant) support: see my lecture 3 of summerschool (Kayne 2000: chapter 14, 15), and the evidence from Koopman and Szabolcsi (2000)
- How does the remnant end up in the seem clause? through complex verb formation, as found in the OV Germanic languages and Hungarian).
- What role does negation/downward entailment play? Marks POL as negative, raises outside VP, and brings the remnant chunk closer to T.
- how come the finite T can combine with can, and not with seem? (complex verb formation and pied-piping to DE brings *can* closer to T than seem ).
- How does the subject map onto the subject position? (by extracting from the raised constituent)

9.3 Where this leads to: the outcome of the derivation

Considerably more derivational depth!
Broken down in pieces from bottom up in the next sections. The mechaniscs..

9.4 Germanic syntax–A verb "cluster" in English

I will assume See and CAN are clustering verbs, as they are in Dutch and German.
What is a verb cluster? sequence of verbs with separable particles/small clause predicates, infinitives, participles, te, zu:that do not contain any of the arguments

(193) Dutch
a. ... < op > kan < op >bellen
   ... can call up
b. ... < schoon > kan < schoon > maken
   ... < clean > can < clean > make.ing

(194) German
c. ... < piano > kan < piano > spelen
   ... can play piano
d. ... < gaan > kan < gaan >
   ... can go

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a. ... an rufen kan
... up-call can
b. ... sauber machen kan
... clean make can
c. ... Klavier spielen kan
... piano play.inf can
d. ... gehen kan
go.inf can

- Extend Koopman and Szabolcsi (2000) to English cannot seem to.
- Parameters: same grammar:
variation is due to phrasal movement (restrictions on size) and pied-piping we don’t want to add new tools, we want to move towards being able to model the typological variations (within Germanic (synchronic or diachronic), including what is possible, and what may be excluded
- Complex predicate formation (UG)
small clauses must form a complex predicate with the selector: this is phrasal movement, and represented as a designated syntactic configuration (slightly larger than the minimal VP), which we called VP+ (sometimes called PredP). These may surface as such in Dutch, German, Hungarian,

(c) Complex verb formation and pied-piping
Picking up the derivation at the point CAN merging with a vP complement.

CAN must form a complex predicate: it attracts a subconstituent of the vP (which we called VP+ [ get \([vP \text{ away get } ]\), which merges on its left (in VP+),

Pied-pipes away: pied-pies the lexical projection vP as shown (195).
a. can merges with vP/VP
b. can attracts VP+ to form a complex predicate (V+ omitted)
c. VP+ pied-pipes vP

9.5.2 Merge DE and subject

Merger the downward entailing expression and the subject DP either by E(xternal) merge, or I(internal) merge, nothing hinges on this.

9.5.3 Merge to

seeem and to

• Question: what is the relative order of merge of to > seem, or seem > to. I follow K&Sz here.

• Insights from Dutch te and German zu: attract an infinitive. to comes Infl which attracts an "infinitival" VP (a morphologically bare VP in English).

(196) Question: which Vp/VP is attracted to Inf and to?

a. not can, but vP (in effect skipping can is a by-product of complex verb formation)

9.5.4 Output of vP movement to to

vP moves to the to-region: this creates remnant constituent

The constituent containing can is what seem needs for complex verb formation..

---

23 Though again nothing much hinges on this for the purposes of the presentation
24 I depart from K&Sz here in allowing subextraction out of a specifier within a phase.
In Dutch and German, the only element following te zu will be the infinitive. In English is is a vP.

9.6 Merge seem, form a verbal complex (by attracting CAN which pied-pipes DE and Subject)

NB: This step "smuggles" CAN past seem

(197)

SCOPE: seem is not c-commanded by the DE expression, and hence seem is not in the scope of the DE
NB: this step must be the highest point at which scope is calculated: even though cannot ends up marking the polarity of the clause as negative\(^{25}\), as the Horn tests show "He cannot seem to do this, can he?" it does not appear to interact with the calculation of relative scope over seem.

9.6.1 What is the role of DE

(199) a. DE is a necessary actor in the derivation
b. Hypothesis: DE expressions must occur in the T region (obviously true for Negative elements, ..)
c. DE will I merge, and pied-pipe can. collaboration under pied-piping: free riders

\(^{25}\)Many thanks to Chris Collins for discussion of this problem.
9.6.2 Merge T

In the next steps in the derivation T merges, can Merges with T, and the subject to Spec, TP, and the closest DP.

9.7 End of Part 1–Interim Conclusion

Part 1: Analysis. (motivating the syntactic hierarchy, working out the syntactic derivation, ie. solving the problem for (177-a))

• A syntactic derivation can be motivated, and spelled out, informed by close common syntax with other Germanic, bringing English (partially) in the Germanic mold. No new tools added to the grammar.

• falls within mildly context sensitive grammars. Mildly Context sensitive grammars (see Joshi (1985)). (As Edward Stabler Stabler (2011) and his colleagues have shown frameworks with antisymmetry or without, with head movement or without, all fall within the class of Mildly Context sensitive grammars)

• There is no syntax semantics mismatch

But there are what may seem to apparent mismatches of to going with the 'wrong verb’ (from a non-movement perspective), and cannot ending up in T (instead of seem). Both are however simply the effect of legitimate steps that are created in the course of the derivation.

10 Part 2: Broader Implications and discussion

10.1 Discussion and Implications

I have argued so far that not only CAN be syntax, but that it MUST be syntax.

• Two arguments: the syntactic order of Merge must be seem > E_{DE} > can

• The idiom argument

But, but....

suppose instead we take the syntax for ?? to be: \textbf{not > can > seemto > V}.50
couldn’t we do this equally well at LF?\(^\text{26}\)

Can we save this syntactic input somehow to derive the properties of the construction?
(if we do so, we must use well-understood and independently needed semantic tools).

\((200)\) idiom formation: semantics take 1: (can afford) takes place at LF, where we semantically compose \textit{can} and \textit{V} after \textit{seem} moves out of the way, and scopes over \textit{can}. (\textit{Homer (2011)})

Why should UG allow this rebracketing or structural change. This mimics the structure where \textit{seem} is not intervening, but that we get from what the syntax shows us. So, it is looks like a non-starter to me.

\((201)\) Or couldn’t we form the idiom by lowering \textit{cannot} below \textit{seem} at LF?

I take \textit{Lowering} is the theory of reconstruction: you can only reconstruct if you were present at some earlier stage in the derivation (i.e. if you undo movement, interpret before movement). Can you lower \textit{cannot} in some other way using semantics at LF? The only real option (as Clemens Mayr suggests to me) would be some version of neg-lowering via some presupposition of \textit{SEEM}. However, under such an approach \textit{can} not crucially will not take literal narrow scope wrt. \textit{SEEM}, and it will be unable to semantically combine with \textit{V} at LF.

- The second argument: aspectual restrictions on \textit{V} under \textit{seem} appear to be lifted. This I suggested is expected since it is \textit{CAN} that should satisfy these restrictions

\textit{seem} to \textit{> DE} \textit{> can} \textit{V}.

\((202)\) Is this argument sound? Can we assume a different mechanism, (which might be independently needed? Here is an attempt\(^\text{27}\)

the progressive restriction under \textit{SEEM} disappears when \textit{SEEM} occurs in the past–ie., "They seemed to sleep" is OK (as pointed out by Wurmbrand (2014), who takes this as evidence that the complement of \textit{SEEM} is entirely tenseless and the aspectual composition is dependent on the matrix tense.

\((203)\) \textit{T seem \[notense \textit{aspect} \]} Wurmbrand (2014)

\((204)\) a. *They seem to sleep* \textit{is like} *they sleep now.}

b. They seemed to sleep \textit{is like} They slept

From here perhaps not a big jump to:

\((205)\) a. \[ can(not) \[ \textit{seem to [ ASP sleep ]} \] \] LF \textit{CAN} can 'see' embedded \textit{ASP}

\((206)\) \textit{My reply to} *all we’d need (if at all) is an LF where the embedded aspect can 'see' CAN* if \textit{seem} linearly intervenes.

a. We already have a mechanism to understand this: movement (internal merge): yields apparent violations of selection

b. It does not explain why \textit{DE} seems to be required

c. It does not explain why this *"John can/could/ seem to sleep" does not yield the suspension

10.2 Are there other elements that can raise as well?

So far, I have argued that (under \textit{seem}) \textit{Raising} to subject is preceded by a step of remnant movement.

\((207)\) \textit{seem \[ to vP/VP \[a \textit{DP T DE/NEG CAN} \[ \beta ...... ]\]}

\(^{26}\) thanks to

\(^{27}\) suggested by anonymous
This now raises the expectation that some other elements hierarchically merged in the stretch of structure with can could be contained in \( \alpha \) under seem, and could potentially raises with \( \alpha \) ending up in the seem clause.

(208)  
\begin{enumerate}
  \item people often cannot seem to loose weight
  \item it seems that people often cannot loose weight
\end{enumerate}

brings us to the adverbs:

10.3 English adverbs

- Adverbs do not scramble. They take scope in their E-merge position (but can undergo movement).
- But: there is an apparent problem in seem constructions that seems relevant in the present context. Adverbs do seem to scramble.

(Examples From Homer)

(209)  
\begin{enumerate}
  \item a. Context: Just looking at the hospitals visitors register, a doctor says. . .
      People often seem to visit the patient of room 32. SEEM > OFTEN *OFTEN> SEEM
  \item b. Some of you guys easily seem to forget that football is a team sport. SEEM> OFTEN
\end{enumerate}

The only option is surface scope when seem takes a tensed complement:

(210)  
\begin{enumerate}
  \item a. It often seems that people visit this patient. *SEEM > OFTEN OFTEN > SEEM
  \item b. It easily seems that some of you guys forget that football is a team sport. *SEEM > EASILY ; EASILY > SEEM
\end{enumerate}

- Solution vP moves to to..inf. Adverbs pied-pipe in the remnant with the subject shifting past seem!

(211)  
\begin{enumerate}
  \item a. seem [ to [ visit his patient [ people often [ visit his patient ] ]]
  \item b. [ people often [ visit his patient ] \_ \_ seem [ to [ visit his patient t \_ \_ ] ] ]
\end{enumerate}

(212)  
\begin{enumerate}
  \item a. people often cannot seem to loose weight
  \item b. it seems that people often cannot loose weight
\end{enumerate}

11 Restrictions within English

Does the analysis have anything to say about restrictions?

- Why only with subject raising seem, but not appear?

(213)  
\begin{enumerate}
  \item a. John cannot seem to loose weight
  \item b. *John cannot appear to loose weight
\end{enumerate}

- Intervention why cannot a PP experiencer intervene between cannot seem and the infinitival? (see below)

- why "ability" CAN but no other modals I have no definitive answer?\(^{28}\)

- Beyond English: From English back to german 'zu'. a German PF problem.

\(^{28}\)I need to work out the finer modality based on comparison with Romance lexicalization patterns (thanks to G Cinque) for pointing this out.
11.1 *seem* vs *appear*

Why does this only work under *seem* but not *appear*? The construction can only arise if a constituent with CAN raises past *seem* (forming a complex predicate) in VP+. If that is not possible with *appear* then we can explain why it fails.

(214) Proposal: *appear* has preserved its Romance syntax: it is synchronically \([p a \rightarrow v\ p\ e\ a r]\), composed of a inseparable root/verb and a P/Part (in VP+). The particle/P is in the position CAN needs to go through, and this type of verbal complex formation (which is the most extreme one with IPP effects). It is well known that Romance P-V verbs are in complementary distribution with Germanic particle verbs.

\[
\begin{align*}
\text{VP+} & \quad \text{vs.} \\
(a(p) & \quad \text{pear} \quad \text{to} \quad \text{vP}) \\
& \quad \text{VP+} \\
I & \quad \text{DE} \quad \text{vp+} \quad \text{seem} \quad \text{to} \quad \text{vP} \\
& \quad \text{t_{vp} CAN}
\end{align*}
\]

cf. Like Dutch toe which blocks particle climbing via Spec, VP+

12 Restrictions

12.1 The intervention problem

*Langendoen* (1970) already mentions that an experiencer cannot intervene between *seem* and the *to infinitival* in the *cannot seem* construction, and gives the following paradigm: (*Langendoen 1970:(9))

(215) a. It seems to me that John can’t run very fast
    b. *John can’t seem to me to run very fast
    c. ?John can’t seem to run very fast to me
    d. To me, John can’t seem to run very fast

For speakers who have the *cannot seem to* construction, the following are OK.

(216) a. John seems to me to be quite happy
    b. John seems to be quite happy to me
    c. To me John seems be quite happy

As *Langendoen* states:

The difference in grammaticality between (9c)(= (215-c)) and (9d)(= (215-d)), however, has nothing to do with can’t-raising, but rather with restrictions on the order of post-verbal constituents, based on the length and internal complexity of their constituents (for discussion, see Ross 1967, Chapter 3). In order for can’t-raising to be applicable, *the restriction is that seem must be followed immediately by the infinitival phrase*

Note that this would follow under the proposal in Cinque (2006c):
a restructuring verb (a verb merged in a functional projection) cannot project an argument.

The *seem* in the *cannot seem to* construction is certainly a restructuring verb, as part of the lower clause end up in the higher clause.

Yes, I will try to see if I can derive it from the syntactic derivations and possible variation.
12.2 Intervention: a timing problem

What we know about the hierarchy, and the merge configurations?

- infinitival *to* and "applicative/experiencer* to merge in the spine

(217)  
a. APPL merges above VP+ of *seem.*
b. infinitival *to* comes with a double inf, and attracts a "VP*"  
c. adposition *to* comes with K, and attracts an experiencer DP. *to > APPL*

(218)  
a. to(inf) K.. to(APPL ) K [ APPL\text{exp}, VP+ seem  
b. to(APPL ) K [ APPL\text{exp}, VP+ seem to(inf)..K  
\text{a yields } *\text{seem to DP to VP* order.}  
\text{b yields } *\text{seem to VP to DP* order}

- How do they interact with complex verb formation that underlies the *cannot seem to* construction?

  - Complex verb formation must involves the Spec, VP+.
  - infinitival *to* merges to create the [ ... NOT CAN] constituent, which forms the complex predicate.  
    *to* is instrumental in splitting the complement.
  - This requires infinitival *to* to be merged before the complex predicate formation, so that [ ... NOT CAN] can escape. This will result in b. as the only order, because the infinitival *to* is forced to merge earlier than the experiencer *to* applicative :

  (219)  
John cannot seem to loose weight to me

On the other hand: to derive the linear order in (220) must imply a sequence of merge, where the *to* applicative merges before the *to* infinitival:

(220)  
a. [ J be losing weight ] seems [ to [ me ... \rightarrow  
b. [ to [ be losing weight [ J be losing weight ] ] sees to me ]  
c. [ seems to me [ to [ be losing weight ] ] ]  
d. John seems to me to be losing weight

(Some) variation in the (external) Merge position of *to* is responsible for different linear orders–Low merge of *to* is acquired earlier than high merge of infinitival *to*

In some languages (French) intervening experiencers are never allowed.

(221)  
a. Jean (me) semble être content  
John (me) seems be happy  
b. (TO CHECK)Jean semble être content à Marie  
c. (TO CHECK) à Marie Jean semble être content  
d. *Jean semble à Marie être content
perhaps: in French there is no element that can attract the infinitival higher than the dative à.  
(why no *de?* 

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13 Further Extensions

13.1 Insights from English to German displaced "zu": an (apparent) syntax-phonology mismatch problem

- Insights from English into German: a syntactic account for 'displaced' zu in certain verbal complexes
  Saltzmann (2016). 29
  German verbal complexes have strict V3 V2 V1 order (corresponding to the scope order),

(222)  .. lesen müssen kan
       .. read.inf must.inf can.inf

except in the so called IPP context: the modal shows up with infinitival, not participial morphology, and depending on the German variety the following strings are found:

(223)  T>Have> Mod >V
       a. ... V3 V1+T V_{inf}^2
           lesen hat können 'read.inf' had 'be.able.INF
       b. .... V1+T V3 V_{2inf}^2
           hat lesen können 'had 'read.inf' "be.able.INF:

- in infinitival clauses of the type ohne –zu"without .... to", a problem arises w.r.t. the placement of zu
  in IPP clusters like (223) (V1 will be Infinitive, because these are infinitives).

(224)  Derived surface shape of "zu" (German) (slightly simplified). zu has a bare infinitive to its
       right and the rest of the V cluster and the cluster to its left.

VP+
   an
   zu rufen C_{inf} t

- the derivation must be compatible with the shape that zu imposes. (lexical properties must be satisfied)
- combining zu with a sequence of 3 infinitives (plus three infinitival morphemes, and a hidden participle)
  Hierarchy of Merge does not tell us about the hierarchy, because of verbal complex formation in English:

(225)  hierarchy of Merge: zu>have> Mod >V Not

       a. ... *zu V3 V1.inf V_{inf}^2
          *.. lesen zu haben können
       b. .... *zu V1.inf V3 V_{2inf}^2
          *zu haben lesen können

But: zu shows up before V2!

(226)  a. ... V3 V1 zu V_{inf}^2
       b. .... V1 V3 zu V_{2inf}^2
       .. lesen haben zu können
       .. haven lezen zu kunnen

- putting the results from English together with German:

29Cite MA thesis of the late Darcy Bruce Berry
können must be closest to zu at the point where zu is merged. (just as cannot must be closest to T since it ends up in T, even though in the scope hierarchy seem seems higher!)

- and bringing in (my) Dutch into the picture:
  this must be an option: te must precede any number of infinitives (so it is well behaved), but können can be the highest infinitive, contrary to expectations:

(228)  
a. zonder dat boek te hebben kunnen lezen  
b. zonder dat boek te kunnen hebben lezen

These structure must be based on a syntactic derivation where können is the highest at the point where we merge zu.

(229)  and ultimately, this is a problem how V2 (the modal) ’escapes’ the requirement of building a participle, which a resulting switch in linear order. (Clearly not something which is postsyntactic.)

I conclude that (228) b is significantly similar to the structure that underlies German zu placement as well! If correct, we have a possibility of finding a syntactic account for the German mismatch, which means that one strong argument for postsyntactic reordering (local dislocation) is (at least) severely weakened!

13.2 What it shows about the future: what syntactic framework we should be pursuing

Form of the syntactic theory we are looking for--

- falls within mildly context sensitive grammars. Mildly Context sensitive grammars (see Joshi (1985)). (As Edward Stabler Stabler (2011) and his colleagues have shown frameworks with antisymmetry or without, with head movement or without, all fall within the class of Mildly Context sensitive grammars)

- models the empirical data, not just for individual languages, but for the typology of human languages in general. provides insight in the relation of English and the syntax of Germanic.

- makes empirical predictions about what is found and what is not.

- analyses must extend within a language (speaker variation) and to related languages (comparative), and UG (a problem in English: how German and Dutch yield clues for the derivation in English and how that derivation informs German zu and Dutch)

- is implementable in Stabler’s Minimalist Grammars (Koopman and Szabolcsi (2000))

- Direct interfaces. syntax that is appropriate for the interfaces with phonology and semantics.

- provides a likely path to acquisition. mapping linear orders onto hierarchical structures
References


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