Regimes of ordering

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NUS

Introduction

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A result

Kayne (1994) attempts to derive these results from a restrictive theory of linear order (the Linear Correspondence Axiom, combined with a set of assumptions about possible phrase structures).

A base-generated spec-head-comp structure may be linearized only in that order, with other orders being derived through movement.

And we should be excited by this prospect — for among other reasons, if Kayne (1994) is right, and the mapping from syntax to LF is relatively transparent in certain ways, then the linear order of constituents in a clause is a direct cue for their relative scope.

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A worry

Unfortunately, if we take Kayne (1994) seriously, we end up making bad predictions for scope in a number of languages.

Case study: Tagalog and Japanese scrambling and scope, considered alongside the scope of arguments and negation.

Proposed way forward: The LCA (Linear Correspondence Axiom) is both right and wrong, but the LCA-governed section of the clause always precedes the non-LCA governed section.

Nice consequences: Captures a number of aforementioned distinctions between the two verb-peripheral languages in a principled way.

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The problem

Linear order and scope should tightly correlate given the LCA.

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Head peripheral languages

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Japanese

The Japanese verb generally follows the arguments and adjuncts construed with it.

To account for this while maintaining the LCA, we need to propose a series of movement operations, which reverse the order of a head and its complement.

(1) [ARG [H [VP ...V ...]]] →   ARG H V

    [[VP ...] [ARG [H <[VP ...V ...]>]]] →   V ARG H

    [ARG [[VP ...V ...] [<ARG> [H <[VP ...V ...]>]]]]   ARG V H

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In other words: <u>precedence should map to scope</u>.

As mentioned before: Japanese is verb-final, with relatively free order of arguments.

(2) a. *Taro-ga ringo-o tabeta*
   T.-NOM apple-ACC eat.past
   'Taro ate an apple.'

   b. *Ringo-o Taro-ga tabeta*
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Head peripheral languages (pt. 1)

The relative order of arguments determines their scope.

(3) a. *[Soko$_i$-no syain-ga] [mittu-izyoo-no
       it-GEN   employee-NOM   three-or.more-GEN
       kaisya$_i$-o] tyoosasita
       company-ACC   investigated
     'Their$_i$ employees investigated three or more
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   b. [Mittu-izyoo-no   kaisya$_i$-o] [soko$_i$-no
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But this makes the wrong predictions for negation. When the object is forced to remain in its lowest LCA-respecting position by marking it with contrastive *-wa*, as in (4), the object must scope below negation.

(4) *Taroo-ga zen'in-wa sikar-anakat-ta*
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Tagalog

The Tagalog verb generally precedes its arguments. Unfortunately, much of the Tagalog verbal complex seems to be prefixal.

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For any span of prefixes (PRE) that start below an argument in a verb initial language, the following derivational steps must take place below the next highest prefix.

(5) [ARG [H [VP ...]]] →   ARG H V
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Considered as a pair, Tagalog is the inverse of Japanese: a head-initial, prefixing language with relatively free order of arguments.

(6) a. *Lumunon*   *[ang ina]*   *[ng mani]*
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        'The mother swallowed a peanut.'

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Here, the LCA makes the right prediction for scope and the relative order of negation and theme.

(7) a. *Hindi na-kita ni Juan ang maraming batanot*
         NEG PV-see CS John ANG many   child
         'John didn't see many children.'

                    (✓Neg > many, *many > Neg) (Byma 1986)

     b. *Maraming usang hindi b-in-aril ng mga hunter*
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What we see, then, is that the LCA partially succeeds and partially fails, in an interestingly systematic way:

It makes the right predictions for the relative scope of two arguments in Japanese, and for the relative scope of negation and theme in Tagalog...

... but the wrong predictions for the relative scope of two arguments in Tagalog, and for the relative scope of negation and theme in Japanese.

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What is to be done?

One option, faced with these challenges, would be to reject the LCA wholesale.

This would be a sad result, since there are many cases where asymmetric c-command between elements *does* seem to determine the relative order of constituents.

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The theory

The big idea

I consider the idea that the LCA is right for portions of the clause but wrong for others.

The differences between Japanese and Tagalog reflect which portions of the clause the LCA is right and wrong for in the respective languages.

In particular, there are other conditions on the mapping of syntax to linear order that might come into conflict with the LCA.

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One thing that might motivate an element to Exit is a requirement like (10).

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   $\neg \exists Z$: <X, Z>, <Z, Y>, when X selects Y and does not select Z.
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A way to linearize things differently

Of course, it's important for elements to be linearized
and pronounced, at least when they're not recoverable
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Something like (11) will make sure that everything that's
pronounced gets a linear order.

(11) **Re-entry:**
   If Y is unordered: Add <X, Y>, where ¬∃Z : <X, Z>, X is
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   ≈ *Unordered elements are linearized after all*
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Basic consequences

The consequence of this is that the clause will be partitioned into two parts:

(12) [PART 1: LCA GOVERNED] [PART 2: NOT LCA GOVERNED]

or, in 'generalization that we want to capture' terms

(13) Elements for which the linear-order/scope correspondence breaks down follow elements for which it holds.

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Some more nice consequences

Reminder about what the theory does ...

For one (linearly contiguous) part of the clause, the relative order of elements is determined by the LCA.

Elements in this portion have their scope fixed with respect to each other, reflected through the LCA in their linear order.

For another (linearly contiguous) part of the clause, the relative order of elements is not determined by the LCA.

The scope of elements in the latter part is not directly related to their linear order.

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The idea presented here: the difference between Japanese and Tagalog reflects different ways of solving the conflict mentioned above. This causes different elements in the clause to appear in the two sections of the clause.

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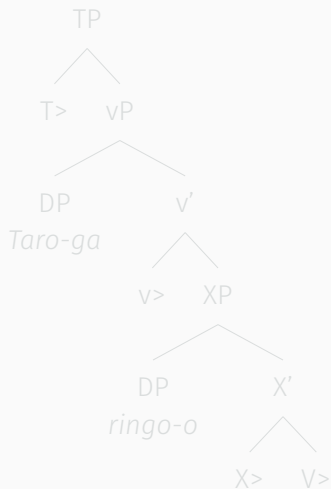
Japanese

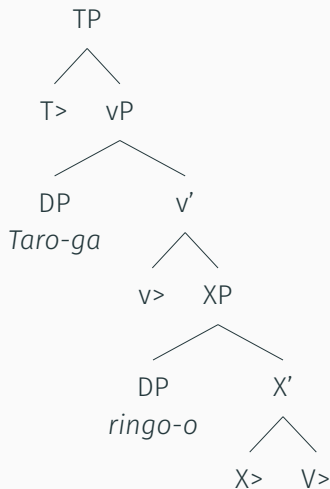Consider a clause structure like that in (14) in Japanese.

(14)
```
          TP
         /  \
       T>    vP
            /  \
          DP    v'
        Taro-ga / \
              v>   XP
                  /  \
                DP    X'
              ringo-o / \
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Taro-ga ringo-o   tabeta
T.-NOM   apple-ACC eat.past
'Taro ate an apple.'

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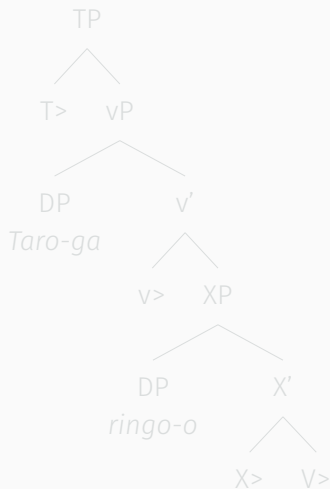
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Japanese

Applying the LCA results in a Selectional adjacency violation.

(15)

TP
├── T>
└── vP
    ├── DP
    │   *Taro-ga*
    └── v'
        ├── v>
        └── XP
            ├── DP
            │   *ringo-o*
            └── X'
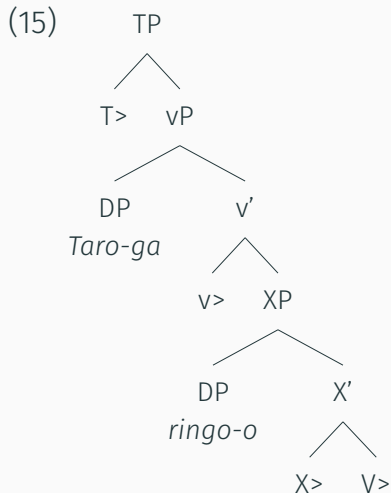   ├── X>
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The object prevents V from being adjacent to v; the agent furthermore prevents v from being adjacent to T.

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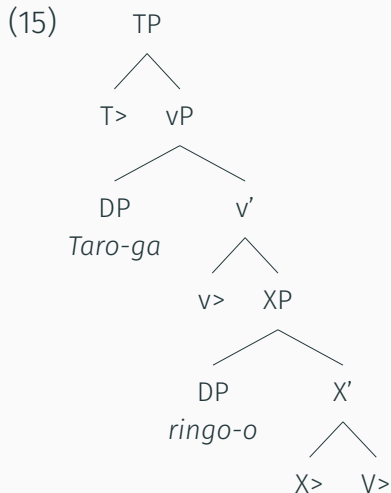
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          /  \
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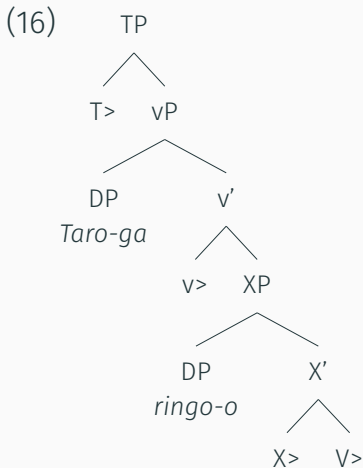
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Applying **Exit (>)** to each element in the clausal spine solves the problem.

(16)

TP
├─ T>
└─ vP
   ├─ DP *Taro-ga*
   └─ v'
      ├─ v>
      └─ XP
         ├─ DP *ringo-o*
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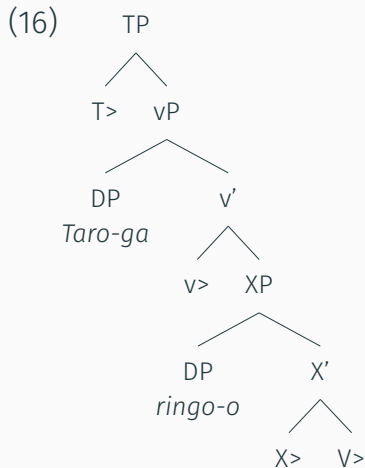   ├─ X>
            └─ V>

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Nothing intervenes between
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The upshot of this:

Re-entry will force the verbal complex to be linearized to the right of all arguments.

Selectional adjacency will force the verbal complex to be linearized together, in a particular order.

The order of elements to the left of the verb will be determined by the LCA (as there's nothing motivating their Exit).

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Since the elements preceding the verb haven't undergone Exit, their order is determined by the LCA — scrambling in Japanese necessarily reflects that the scrambled element has moved to a position from which it c-commands what it has scrambled across.

Conversely, the relative order of negation and arguments is not determined by the LCA — accounting in part for the relative flexibility of their scope with respect to each other.

See Appendix 1 for more of the technical details on how the theory under consideration might capture the relatively flexible scope of negation in Japanese, in contrast with Tagalog.

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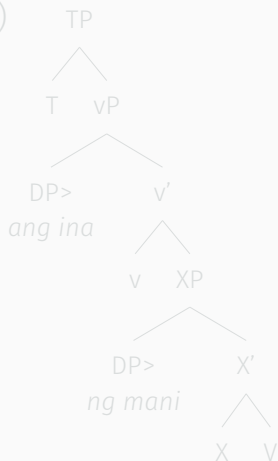
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Tagalog

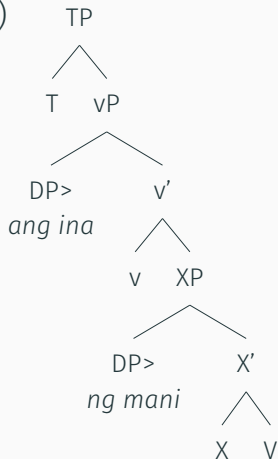Suppose a similar clause structure for Tagalog.

(17)

```
          TP
         /  \
        T    vP
            /  \
         DP>    v'
        ang ina / \
               v   XP
                  /  \
               DP>    X'
             ng mani  / \
                     X   V
```

L<um>unon [ang ina] [ng mani]
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       /  \
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          /  \
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              DP>     X'
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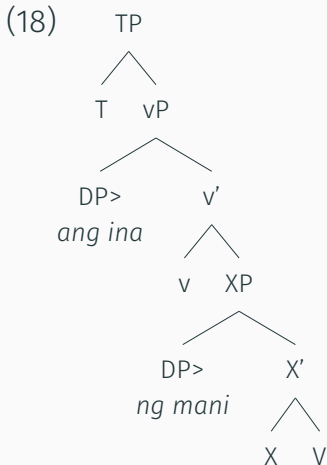
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Tagalog

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(18)

```
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       /  \
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          /  \
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            DP>    X'
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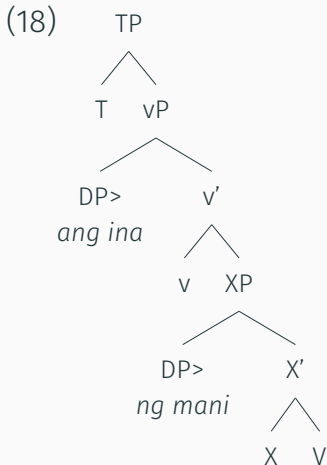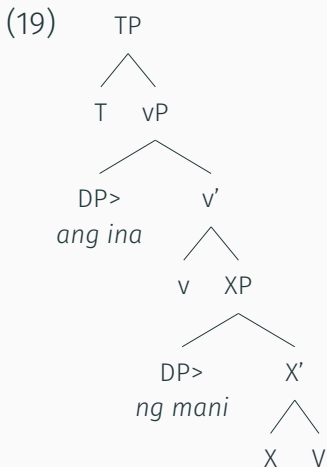
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Applying **Exit** to the phrasal arguments between the heads on the clausal spine solves the problem.

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```
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        /  \
       T    vP
           /  \
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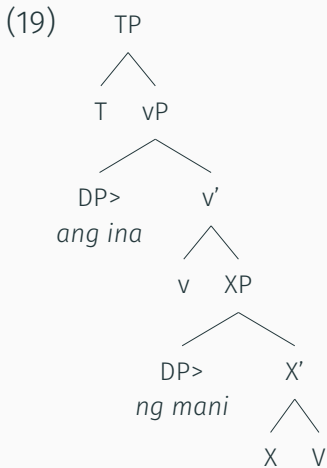
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The absence of the problematic
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38

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(19)

```
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           /  \
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              /  \
          DP>     v'
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The absence of the problematic phrases solves the problem.

The upshot of this:

Re-entry will force arguments and satellites to be
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Nothing in particular will force the arguments and
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Summing up Tagalog in more detail

The order of elements following the verb in Tagalog is thereby not determined by the LCA. So their linear order need not reflect their relative scope.

Negation precedes — and thus c-commands — the underlying structural position of the arguments, and therefore scopes above them.

Moving an argument above negation makes it subject to the LCA.

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Moving an argument above negation makes it subject to the LCA.

A different sort of evidence

So far, much of the evidence for the difference between scrambling in Tagalog and Japanese came from differences in semantic interpretation.

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Scrambling in T&J behaves differently for stress

In Japanese, scrambling affects nuclear stress assignment: nuclear stress falls on the object in an SOV clause but the subject in an OSV clause (Ishihara 2000; Miyagawa and Tsujioka 2004; Sato 2009; Ishihara et al. 2018).

In Tagalog, scrambling does not have an effect on nuclear stress (Richards 2017): in agent voice clauses, for instance, the theme is always more prominent than the agent, regardless of their relative order.

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Stress is structurally governed

Much work suggests that the relative prominence of elements in a clause is determined by their position in the syntactic structure (Bresnan 1971; Cinque 1993; Kahnemuyipour 2009, a.m.o.).

The distinction between the two types of scrambling in terms of the effect on stress falls out straightforwardly given any such theory of stress assignment and the theory presented in this paper.

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Japanese scrambling alternations reflect distinct syntactic structures, where the linear order of the arguments involved is determined by these structures.

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This matches what we've said before about scope

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Conclusions

What we've learned

What we've seen are some problems for an attempt to derive X-bar theory from more general principles: the LCA (Kayne 1994) — scope, as a diagnostic for c-command, diagnoses the wrong c-command relationships for certain linear orders.

The theory developed here — and facts it covers — ends up being an argument for the LCA, albeit in a weakened form.

As implicitly presented here, the LCA is part of a process of linearization which operates on the output of the syntax, rather than as a constraint on possible derivational steps in the syntax (per Kayne's original formulation).

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Future work?

A perhaps more interesting approach would be to maintain Kayne's (1994) original formulation of the LCA as a condition on admissable syntactic structures.

On this view, structure which the LCA cannot linearize might ultimately be pronounceable — on par with the unlinearizable structures discussed here — resulting in a similar disconnect between the scope properties and the linear order of the structures in question.

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Thank you!

Appendix: The location of Japanese negation

Where's negation?

Basic idea: the position of negation is flexible in Japanese (see Kataoka 2006 for a recent proposal along these lines).

Negation stands in a selectional relationship with the lexical V — and is forced to appear in a linearly adjacent position when **Re-entry** applies.

The scope of negation here is truly not tied to its linear order: not in the clause, nor its position in the verbal complex [which might be scopally/structurally informative to the structure of the clause, through something such as the Mirror Principle, following Baker (1985)].

Ultimately, we might hope that the cue that an element is 'flexibly positioned' in Japanese comes in part from the

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