A Derivational Theory of Clause Type and the Unity of Movement
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Handout 2: "Raising, Control and the Unity of Movement "

Part 2: The derivational nature of infinitivization

- *Claim:* Infinitival clauses are the result of Kinyalolo Dissimilation, and are derivationally produced from clauses originally built as full finite CPs.

1. Challenges concerning the source of nominative case

The standard case-theory + agreement theory of NOM

(1) **Flavors of T: lexical choice**
T may come from the lexicon (i) with or (ii) without a set of φ-features that trigger subject agreement and NOM case. A finite clause in a language like English results from choice (i), and an infinitival clause reflects choice (ii). Finiteness is a matter of *lexical choice*.

(2) **Agree-based NOM**
Agreement with T assigns/values NOM.

(3) **Case Filter**
DP must be licensed by Case assignment (*variant*: by Case valuation).

(4) **General predictions of the standard theory of NOM and the Case Filter ...**
  a. **Class 1:** ... *concerning presence or absence of agreement with T*
  A nominal whose only possible source of licensing is φ-feature agreement with T will suffer one of the following fates if T cannot enter into an agreement relation with it:
    1. *salvation by Movement:* it moves to a position where it is licensed by some other element (e.g. an ACC-licenser, or the agreeing T of a higher clause); or
    2. *salvation by External Merge:* some later-merged element licenses it in situ; or
    3. *no salvation:* assign *star* if neither of these possibilities is realized.

- **Rephrasing the prediction:** a nominal specifier of TP without subject agreement obligatorily undergoes Raising to Subject (**R1**) or Raising to Object/Spec,VP (**R2**) (ignoring English *for*-infinitives for now).

  b. **Class 2:** ... *concerning non-nominals*
  If the properties summarized under "Rephrasing" above are part of the same story as the story that motivated case theory for complements (e.g. (5)), **the obligatoriness of R1 and R2 should not be detected with non-nominals** .

(5) **Nominal vs. non-nominal complements differ in case needs**
  a. We are sure [that the world is round].
  We are sure *(of) the world's roundness.
  b. my proof [that the world is round]
  my proof *(of) the world's roundness

The challenge to class 1 from Icelandic

(6) **Quirky subject, nominative object in finite clause**
  a. Barninu   batnaði   veikin.
  the.child.DAT recovered.from.3SG the.disease.NOM
  'The child recovered from the disease.'
  b. Barninu   bötnuðu   veikirnar.
  the.child.DAT recovered.from.3PL the.diseases.NOM
  'The child recovered from the disease.'

(7) **Quirky subject, nominative object in an R2 infinitival complement**
  Læknirinn$_i$ telur   barninu   (í barnaskap sínum$_i$) batnaði   veikin.
  the.doctor.NOM believes the.child.DAT (in foolishness his)   recovered.from.INF the.disease.NOM
  'The doctor$_i$ believes the child (in his$_i$ foolishness) to have recovered from the disease.'

- The embedded NOM object in (7) is unexpected in theories of case and nominal licensing that have (1), (2), and (3) as tenets.

- "... [I]f tensed inflection with agreement is the source of NOM case on the objects of DAT subject verbs, we would expect the object to lose its NOM case in an infinitive, because infinitive inflection does not assign NOM. Instead [...], such DAT subject/NOM object verbs still take a NOM object in infinitival constructions although there is no element around to assign NOM case." (Marantz 1991 "Case and Licensing", 18-19)

A less well-known challenge to class 2 predictions

(8) **The case needs of nominal subjects in the standard theory...**

a.	Sue considers Mary to have solved the problem.	*R2*
b.	Mary seems to speak French well.	*R1*
c.	*It seems Mary to have solved the problem.	*unacc. V*
d.	*It was believed Mary to speak French well.	*passive V*
e.	*Mary is aware Bill to be the best candidate.	*A*
f.	*Mary's belief it to have been raining	*N*

(9) **... are mirrored by CP subjects ...**
  baseline: [That the world is round] is a tragedy.
  a.   Sue considers [that the world is round] to be a tragedy   *R2*
  b.   [That the world is round] seems to be a tragedy.   *R1*
  c. *It seems [that the world is round] to be a tragedy.   *unacc. V*
  d. *It was believed [that the world is round] to be a tragedy.   *passive V*
  e. *Mary is aware [that the world is round] to be a tragedy   *A*
  f. *Mary's belief [that the world is round] to be a tragedy   *N*
    (but perhaps CP subjects are actually nominal?)

(10)   **... and mirrored by predicate-inversion (AP) subjects ...**
  baseline: Even more important than linguistics is the fate of the planet.
  a.   Sue considers [even more important than linguistics] to be the fate of the planet.[19]   *R2*
  b.   [Even more important than linguistics] seems to be the fate of the planet.   *R1*
  c. *It seems [even more important than linguistics] to be the fate of the planet.   *unacc. V*
  d. *It was believed [even more important than linguistics] to be the fate of the planet.   *passive V*
  e. *Mary is aware [even more important than linguistics] to be the fate of the planet   *A*
  f. *Mary's belief [even more important than linguistics] to be the fate of the planet   *N*

(11)   **... and mirrored by fronted locatives in Locative Inversion ...**
  baseline: In this room are found the finest examples of Athenian sculpture.
  a.   Sue considers [in this room] to be found the finest examples of Athenian sculpture   *R2*
  b.   [In this room] seems to have been found the finest examples of Athenian sculpture.   *R1*
  c. *It seems [in this room] to be found the finest examples of Athenian sculpture   *unacc. V*
  d. *It was believed [in this room] to be found the finest examples of Athenian sculpture   *passive V*
  e. *Mary is aware [in this room] to be found the finest examples of Athenian sculpture   *A*
  f. *Mary's belief [in this room] to be found the finest examples of Athenian sculpture   *N*

(12) **... and mirrored by expletive subjects ...**
  baseline: There is a riot in progress
  a.   Sue considers [there] to be a riot in progress.   *R2*
  b.   [There] seems to be a riot in progress.   *R1*
  c. *It seems [there] to be a riot in progress.   *unacc. V*
  d. *It was believed [there] to be a riot in progress.   *passive V*
  e. *Mary is aware [there] to be a riot in progress.   *A*
  f. *Mary's belief [there] to be a riot in progress   *N*

The "Case and Licensing" response to the Icelandic challenge

- *Claim:* Nominals have no need for licensing.

But then what yields the standard case-theory generalizations concerning nominal vs. non-nominal complements?

- *Claim:* The Icelandic challenge shows us that "NOM is assigned by φ-agreement" is wrong, since we see NOM where there is no φ-agreement. Instead the right logic is "Agreement is assigned by NOM" (Bobaljik 2008).

- *But then what yields the correlation between infinitive~finite and movement~non-movement from subject position in* (8)*?*

  Marantz makes a proposal for R1 involving avoidance of satisfying EPP on T with an expletive (forcing movement) — *but this does not extend to the R2 and no-movement-at-all parts of the paradigm.*

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2. An alternative, derivational approach to the NOM challenges

Overview of the approach

- At least one of the tenets of *standard* case theory from section 1 must be wrong:
  (1) Whether a clause is finite or infinitival is a matter of lexical choice.
  (2) NOM is assigned under φ-featural agreement with T.
  (3) Nominals must be case-licensed.

Proposal: challenge tenet (1), instead of (2) or (3).

In a nutshell:
- In languages like English, the non-finiteness of embedded clauses in R1 and R2 constructions is a *consequence, not a trigger* of the raising of the embedded subject (as discussed in the first handout).
- Whether a clause is finite or infinitival is not a matter of chosing finite or non-finite T from the lexicon, but is *derivationally determined*.
- **All clauses begin their derivational lives as full finite CPs.** Non-finite clauses reflect reduction of T or C or both …
- ...as a consequence of an operation of **Kinyalolo Dissimilation** that produces an infinitive when the subject moves from Spec,TP to Spec,CP (in these examples, as a first step of successive-cyclic A-movement).

  Relevance to NOM challenges:
- **Class 2 (infinitive) challenges:**
  o   Subjects of clauses that end up infinitival have no special case-theoretic problem. The starred examples in paradigms (8)-(12) have nothing to do with case theory — but instead are **instances of illegal infinitivization when its structural description is not met:** the subject didn't move anywhere.

- **Class 1 (Icelandic) challenges:** Because every clause starts as a full and finite CP, *every clause starts its life endowed with a T that can assign* NOM.
  - o The embedded clause in (7) is infinitival because its quirky subject underwent R2 raising via Spec,CP, triggering reducton (here of both T and C, to be discussed eventually)..
  - o The NOM object in (7) is licensed and bears NOM because its clause had a T that agreed with it before reduction took place. NOM here is a memory of the clause's past life as a full finite CP with unreduced T.

Some presuppositions of the "lexicalist" standard theory

Standard lexicalist view of the past four decades (Kiparsky & Kiparsky 1970, Bresnan 1972)
- The finiteness of a clause and presence/absence of C is a result of the lexical items freely chosen to participate in the derivation that built that clause (*Lexical Array*).
- For example: if [±Past] and C do not form part of the Lexical Array chosen to build a particular clause, the result will be a reduced infinitive. Conversely, if [±Past] and C are chosen, the result will be a full finite CP.

How the behavior of R1 and R2 looks from the standard lexicalist perspective
- Given that the derivation has built an infinitive, how does the system solve the problems that follow from having chosen to build an infinitive?
- *For example*: The subject of an English infinitive has a licensing problem that can be solved (only) if an R1 or R2 probe successfully locates it, so that that movement and case-licensing becomes possible. This is possible only across a reduced infinitival clause boundary but not across an unreduced one, due to [various proposals].

An alternative "derivationalist" view
- Abandon the assumption that infinitives and reduced clauses are "born, not made".
- Movement of the embedded subject *precedes* the differentiation of the embedded clause into finite vs. non-finite — and *triggers* its reduction to an infinitive.

Crucial background for the alternative view

(13) **Full CP hypothesis**
Every embedded clause is built by Merge as a full finite CP, and may be reduced to a less-than-full clause only as a consequence of later derivational processes.

(14) **Nature of English *to***
a. an instance of T, as in most standard theories …
b. … whose tense and agreement features have been removed (affecting its exponence)

3. Pedagogical pause: English R2 constructions do involve raising of the embedded subject into the higher VP

The basic puzzle of English (and Icelandic) R2

(15) **postverbal element in R2 behaves like embedded-clause subject ...**
Mary judged there to be a good reason for the meeting.

(16) **... but shares properties with higher-clause direct objects**
a. Mary believed me$_{ACC}$ to have solved the problem.

b. Sue$_i$ proved herself$_i$ / her$_{*i}$ to be a capable leader.

In favor of movement into the higher verbal domain (vs. in-situ ECM)

(17) **R2 subject precedes higher-clause low-VP adverbs** (Postal (1974, 146-7)
a. Somebody found Germany recently to have been relatively justified in the [1915] *Lusitania* sinking. (Postal)
b. Sue believes Bill with all her heart to be the best candidate.
c. Mary proved Sue conclusively to have committed the crime.

(18) **Analysis (on conventional assumptions about infinitives)**

(19) **R2 subject may precede the particle of a higher-clause Verb-Particle construction**
a. They made these people out [to be great writers].
'They intentionally gave the impression that these people are great writers.'

b. They made it out [to be raining] when it was just drizzling.
'They intentionally induced us to believe that it was raining, when …'

(20) **R2 subject c-commands low elements in the higher clause** (Lasnik & Saito 1991)
Principle C:
a. John believes that he$_i$ is a genius even more fervently than Bob$_i$'s mother does.
b. *John believes him$_i$ to be a genius even more fervently than Bob$_i$'s mother does.
Principle A:
c. The DA proved the defendants$_i$ to be guilty during each other$_i$'s trials.
d. *The DA proved [that the defendants were guilty] during each other's trials.

- If accusative case and binding conditions care about phase-mate status, R2 constructions differ from embedded finite clauses as required.

If R2 involves movement, it is a twin of R1, for which movement is not in doubt:

(21) **Raising-to-Subject (R1)**
Mary appears to have solved the problem.

4. An argument for infinitivization as a process: no need for case licensing, yet patterns with nominals

- *Claims:*

Logic: The embedded clause ends up as an infinitive only if its subject raises by A-movement to Spec,CP — on its way out of the clause, in Raising constructions. **This is the same "only when triggered" logic that we already saw in the first handout when discussing Zulu hyperraising and related phenomena.**

Irrelevant factors: Infinitivization triggered by A-movement to Spec,CP takes place **independent of the syntactic category and case needs (or lack thereof) of the mover.**

(22) **Working assumptions about movement:**
(i) **Boring idea about probes and EPP:**
An X-probe on α with an EPP property triggers movement of the closest XP, forming Spec,αP.
(ii) **Relevance of criteriality (**Rizzi, *passim.***):**
An X-probe on α with an EPP property may determine the specifier that it creates to be **criterial** or **non-criterial.** If criterial, the specifier *may not move further,* even if found by a higher probe. If non-criterial, the specifier *must* move further, i.e. may not remain in that position.

(23) **Criterial vs. non-criterial specifiers of the various φ-probes relevant to R1 snd R2**
o **C:** non-criterial in R1 and R2 constructions
o **higher V:** criterial for R2 predicates (an "R2 probe")
non-criterial for R1 predicates (an "R1 probe")
o **higher *v*:** non-criterial and relevant for R1

(C and *v* bear Ā-probes)

(24) **Location of criterial R2 probes in English**
Present on a subset of active instances of V (but not passive or unaccusative verbs, and not A or N.

(We assume that non-criterial R2 probes are present on other instances of V at least, and probably A and N as well.)

- In (8a-b) [repeated below], the embedded subject has moved to Spec,VP in response to an R2 and R1 probe, respectively — but in (8c-f) it has remained in the embedded clause, so infinitivization cannot happen (or else moved to non-criterial Spec,VP, triggering infinitivization, but illegally remained there — a parse we will ignore in what follows).

(8) [repeated]
a. Sue considers Mary to have solved the problem. *R2*
b. Mary seems to speak French well. *R1*
c. *It seems Mary to have solved the problem. *unacc. V*
d. *It was believed Mary to speak French well. *passive V*
e. *Mary is aware Bill to be the best candidate. *A*
f. *Mary's belief it to have been raining *N*

Case and the subject of infinitives:
- On a Dissimilation approach to infinitivization and clause size, **the subject of an embedded infinitive has no case-licensing problem** — since its clause was a full finite CP until dissimilatory operations applied.

Dissimilation only when triggered:
- Untriggered infinitivization should yield unacceptability...

- ... which is why phrases that seem to have no case needs as complements show the same paradigm as nominals when the subject position of infinitives vs. finite clauses is at issue: the paradigms in (9)-(12).

5. Infinitivization as a process — a derivational opacity argument
no visible case licenser yet nominals are ok (the Kayne paradigm)

Derivational opacity and case-licensing

- A moved nominal subject of a subordinate clause that has been infinitivized was assigned NOM and case-licensed in that subordinate clause ...
- ... but its case-licenser is not present on the surface, an instance **of derivational opacity**.

- Standard instances of R1 and R2 raise the nominal to a position where it receives a second case (more on this below), and thus are equally compatible with the familiar proposal that the nominal never was case-licensed in the embedded clause.
- A legal configuration in which raising triggers infinitivization but does not target a new case position, however, will provide an argument for the derivational opacity of NOM assignment posited here.

Setup: Configuration in which the subject σ of an embedded clause may not undergo R2 movement, either because:
    (a) **no-criterial φ-probe on the higher V:** the R2 φ-probe on V of the higher clause that could attract σ and permit it to remain in Spec,VP is not criterial or does not exist, or
    (b) **minimality problem:** an intervening nominal blocks contact between a φ-probe on V of the higher clause and σ.

From a Kinyalolo Dissimilation perspective...
    ... the embedded clause in situations (a) and (b) may be infinival only if its subject is raised out of its clause and does not end up remaining in Spec,VP.
       o In situation (a), the subject must be attracted by some criterial probe after (or instead of) a φ-probe on V.
       o In situation (b), the extractor could only be an Ā-probe, since the same Minimality considerations that would block the φ-probe R2 should block R1.

From a Lexicalist perspective ...
    ... in which infinitives are born rather than made, **situations (a) and (b) would both look like additional puzzles of case theory** — case-licensing of the embedded subject only if it undergoes Ā-movement or R1.

Situation (a) instantiated:

(25) **English *wager*-class verbs (Postal 1974; Pesetsky 1991)**
    a. *We wagered Mary to be the most likely winner.
    b. Mary, who we wagered to be the most likely winner...
    c. Mary was wagered to be the most likely winner.

(26) **French *believe*-class verbs (Kayne 1980)**
    a. *Je croyais   cet homme être   arrivé.
        I believed this man   AUX.INF arrived
        'I believed this man to have arrived.'

    b. l'homme que je croyais être   arrivé...
        the.man that I believed AUX.INF arrived
        'the man that I believed to have arrived...'

    c. %Marie a   longtemps été crue   avoir résolu ce problème.
        Marie AUX long.time   been believe.FEM have solved this problem
          (also 'consider', 'suppose', 'say', 'guess'...; Pollock 1984)

(27) **Stipulation**
    The verbs that show the paradigm of (25) and (26) lack a criterial R2 probe.

Situation (b) instantiated:

(28) **Double-object infinitive-taking verbs**
    a. *I assure you Mary to be the best candidate.
    b. *Mary was assured you __ to be the best candidate...
    c. ✓Mary, who I assure you __ to be the best candidate...   (Kayne 1984)

The puzzle in a standard lexicalist theory: *How is the embedded subject licensed?*

The puzzle for a derivationalist theory: *Why did the embedded clause become an infinitive?*

In a lexicalist world:

- *Premise:* the infinitival clause in (28b) is non-finite from the beginning.

- *Easy examples:* In (28a), the embedded subject needs case-licensing — and cannot receive it in the subject position of an infinitival clause because the indirect object intervenes (cf. *I assure you my sincerity*). In (28b), locality prevents the movement of *Mary* over *you*.

- *The challenging example*: In (28c), the moved embedded subject receives case in an intermediate landing site that it cannot receive *in situ*.
            (Kayne 1984; Pesetsky 1991; Rezac 2013)

But the powers and non-powers of the putative higher case assigner would have to be extraordinarily peculiar:

(29) **Peculiarity 1:** The putative case assigner is insensitive to category distinctions that otherwise matter for case.
    a. **passive**:   Mary, who I've been assured to be the best candidate...
    b. **adjective**:   Mary, who I am positive to be the best candidate...
                      Mary, who we're confident to be the best candidate...
    c. **noun**:   %Mary, who I have a hunch to be the best candidate...

(30) **Peculiarity 2**: The putative case assigner saves *only* nominals that have been extracted from the subject position of an infinitive. Extraction of a complement from a non-case position cannot be saved by this case assigner.
    a. **passive**:   your honesty, which I've been assured *(of) ...
    b. **adjective**:   Mary, who I am positive *(about)...
                      Mary, who we're confident *(of)...
    c. **noun**:   Mary, who I have a hunch *(about)...

The derivationalist alternative

- **Infinitivization is the issue:** If movement from an embedded clause to one of the positions in (24) does not happen, no infinitivization is possible. The clause will remain a full finite CP.

- **No puzzle for case theory:** No need to worry about the licensing of the moved subject in the *wager*/French or *assure* paradigms. **The subject is always licensed in the embedded clause before reduction of T to *to*.**

    In (31a-c), since movement of the embedded subject to an R2 position is impossible, **the embedded clause should have remained finite**, as in (32)

(31) **Not a case problem, but an untriggered infinitivization problem**
    a. *We wagered Mary to be the most likely winner.
    b. *Je croyais cet homme être arrivé. 'I believed this man to have arrived.'
    c. *I assure you Mary to be the best candidate.

(32) **Example (31a-c) without Raising**
    (perhaps the φ-probe on C or V or both is optional)
    a. We wagered that Mary was the most likely winner.
    b. Je croyais que cet homme est arrivé. 'I believed that this man arrived.'
    c. I assure you that Mary is the best candidate.

Non-subject Ā-movement from embedded clause

- **Question:** Why does infinitivization not accompany *object* extraction? In (33), the embedded subject is licensed by finite T before infinitivization — so why does extraction of the object not infinitivize the embedded clause?

(33) **Non-subject extraction does not feed infinitivization**
    *This book, which I assure you Sue to have read __.

- **Answer:** No movement takes place here from Spec,TP to Spec,CP. It's not just movement to Spec,CP that triggers infinitivization, but specifically movement from Spec,TP.

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6. Does Icelandic really challenge classic case theory?

NOM objects in non-finite clauses (repeated)

(34) **Quirky subject, nominative object in finite clause**
    a.   Barninu   batnaði   veikin.
        the.child.DAT recovered.from.3SG the.disease.NOM
        'The child recovered from the disease.'
    b.   Barninu   bötnuðu   veikirnar.
        the.child.DAT recovered.from.3PL the.diseases.NOM
        'The child recovered from the disease.'

(35) **Quirky subject, nominative object in an R2 infinitival complement**
    Læknirinn$_i$ telur   barninu   (í barnaskap sínum$_i$) batnaði   veikin.
    the.doctor.NOM believes the.child.DAT (in foolishness his)   recovered.from.INF the.disease.NOM
    'The doctor$_i$ believes the child (in his$_i$ foolishness) to have recovered from the disease.'

Life history of (35)

While the embedded clause is a full finite CP...
- Finite T in the embedded clause assigns NOM and case-licenses the nominative object — by whatever magic permits it to do so in simple clauses.

When the R2 probe on 'believe' finds the DAT subject of the embedded clause ...
To be changed a bit later!
- It has first moved to Spec,CP, which (more to say specifically about this) is a Dissimilation Configuration.
- The embedded DAT raises to spec,VP (over a higher-VP adverb, if present).

Anaphor-Agreement Effect before Infinitivization

(36) **Anaphor-Agreement Effect**
    a. *Mary believes that herself gave a good talk.
    b. *Jón segir að sig elski   Maríu.   (Icelandic)
        John says that REFL love.SUBJ.3SG Mary

Reasons to blame the star on agreement:

- a NOM-marked reflexive anaphor should be acceptable in a language without subject agreement (as long as its antecedent is sufficiently local)
- any syntactic position that is agreed with, even a non-subject, should block the appearance of a reflexive in that position
- special strategies might be invoked cross-linguistically that suppress agreement — to permit a reflexive in otherwise agreeing positions   (Woolford 1999, 258; Sundaresan 2016, 79; Yuan 2018)

- **No surprise** that when an otherwise licensed Icelandic reflexive bears quirky case and therefore fails to trigger φ-agreement, it is acceptable as a subject (since long-distance binding of a reflexive across a subjunctive clause boundary is generally permitted in Icelandic):

(37) **No AAE effect for quirky subject (Icelandic)**
      Hún sagði að sér   þætti   vænt um mig.
      she said   that REFL.**DAT** was.SUBJ3SG fond of me
                              (Maling 1984, 216 ex 8b; Woolford 1999, 261 ex 9a)

- **No surprise** that a NOM object, which is a target for agreement by finite T, may not be a reflexive in a finite clause:

(38) **AAE effect for NOM object in finite clause (Icelandic)**
      *Maríu   leiðist   sig.
       Maria.**DAT** find.boring.3SG REFL.**NOM**

      Intended: 'Maria finds herself boring.'
                              (Everaert 1991; Woolford 1990)

- **A big surprise (perhaps):** that a reflexive is **also excluded as the NOM object in an infinitival R2 clause,** where there is **no visible agreement morphology** in the embedded clause:

(39) **AAE effect for NOM object in *non*-finite clause**
      *Ég tel   Maríu   leiðast   sig.
       I believe Maria.**DAT** find.boring.INF REFL.**NOM**

      Intended: 'I consider Maria to find herself boring.'

- Not attributable to a failure of c-command by the DAT antecedent — since a DAT nominal may serve as the antecedent for a non-nom reflexive.
  (Zaenen et al. 1985, 456 ex 31; Taraldsen 1996, 200 ex 28)

Infinitivization resolution: The AAE arises from the pre-infinitivization derivational period in which the embedded clause contained a T that agreed (or attempted to agree) with it.

Part 3: What reduces where

7.   Reduction hierarchy and infinitivization under Raising

- Languages differ in exactly what obliterations and what reductions they tolerate.
- Higher predicates may select for or against the output of reduction.

(40)   **Reduction hierarchy in Kinyalolo Dissimilation**
       a. Don't delete if the language prohibits it >>
       b. **otherwise Reduce C if specifier is non-criterial** (C lacks semantic content) >>
       c.   **otherwise Reduce T**

Easier Examples:

- **Long-distance Ā-movement of subject via spec,CP**
  C is non-criterial and declarative (semantically vacuous) → **reduce C**
  (delete C, delete all C's features (*that*-trace effect), alter it (*que~qui*)

- **Short-distance Ā-movement of subject to spec,CP**
  C is criterial and interrogative (semantically contentful) → **reduce T**
  (anti-agreement)

Harder examples:

- **Long-distance A-movement of the subject via spec,CP, i.e. R1 and R2**
  C is non-criterial and declarative → **reduce C**
 **But why is T also reduced in English R1 and R2?**

  This relates to the following question:
  When C is inaudible due to Kinyalolo Dissimilation, are some features of C still present, projecting CP, or is CP entirely *exfoliated* due to total elimination of its features?

  Proposal: Both possibilities are attested — total exfoliation and mere silencing.

- In English-style infinitival Raising constructions, CP has been exfoliated, producing a situation of (derived) TP complementation:

(41) *Step 1*: subject movement to Spec,CP → maximal reduction of C (yielding exfoliation of CP):

← *Kinyalolo dissimilation entirely deletes C, removing this portion of the structure*
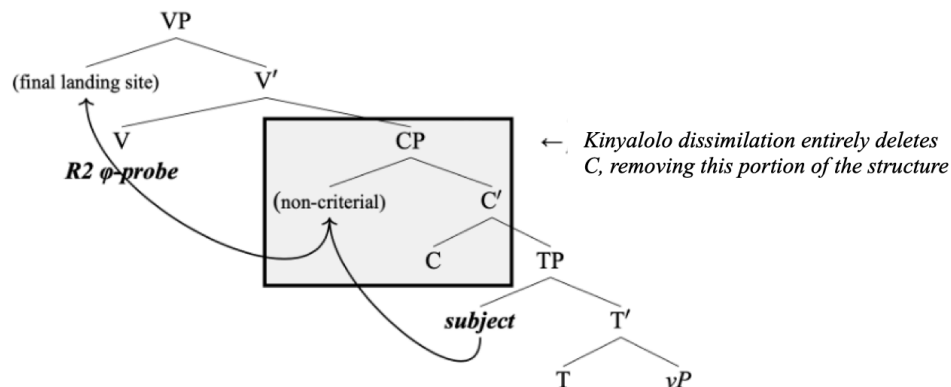
- We now generalize Kinyalolo Dissimilation so that it is not just about C and T:

(42) **Kinyalolo Dissimilation (generalized)**

In [$_{XP}$ … X [$_{YP}$ .... Y …]], where YP is the complement of X, if both X and Y have triggered movement of the same phrase, one or the other must undergo featural reduction.

- And we generalize the reduction hierarchy:
(43) **Reduction hierarchy in Kinyalolo Dissimilation (generalized)**
   a. Don't delete if the language prohibits it >>
   b. otherwise reduce the higher head if non-criterial (lacks semantic content) >>
   c. otherwise reduce the lower head

- If Kinyalolo Dissimilation is generalized in this fashion, we can see that Exfoliation of CP has created a new dissimilation environment involving the higher V instead of C. Since it has semantic content (and in R2 is criterial), T now reduces.

(44) *Step 2*: new Kinyalolo configuration → reduction of T

T reduced to tenseless form in response to new Kinyalolo Dissimilation environment involving specifiers of higher V and embedded T
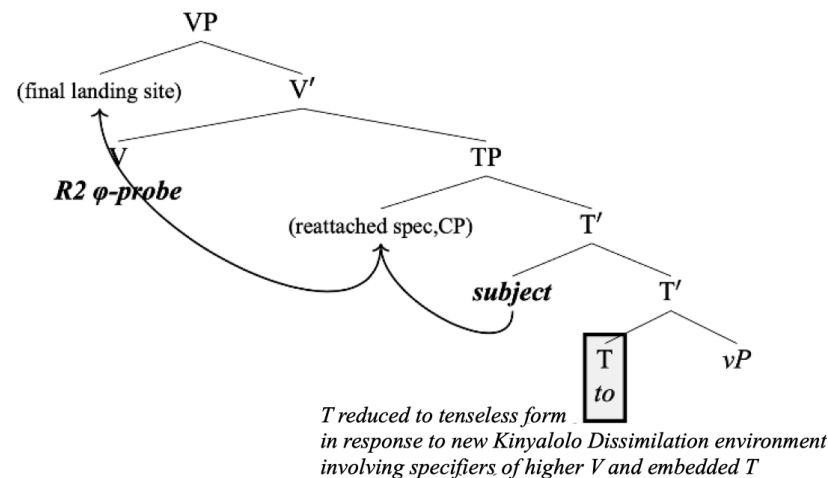
- In Lusaamia and Moro hyper-raising with a *that*-trace effect, let us suppose that CP is not totally exfoliated, but merely loses its phonological features — with that reduction counting as Kinyalolo Dissimilation for both the C-T and V-C applications of the rule.

  Because CP is never exfoliated, and C is not criterial, nothing motivates reduction of T — hence its hyper-raising character.

8. Some details

(45) **A probe-featural view of the A/Ā distinction**
   … ideas developed and defended in Van Urk's (2015) dissertation
   a. A-movement is movement triggered by a φ-probe with EPP.
   b. Ā-movement is movement triggered by an Ā-probe with EPP.

(46) **Ban on improper movement**
   An element that has undergone Ā-movement may not undergo A-movement.
   (Even if a φ-probe treats it as a goal, it may not trigger movement.)

(47) **The features of important heads with an EPP property in English**
   a. **T:** always φ
   b. **C:** always Ā, optionally A
   c. **V:** always A [criterial for R2 verbs, otherwise not]
   d. ***v:*** always non-criterial Ā and (probably) always non-criterial A

(48) **Possible Kinyalolo dissimilations in English**
   a. C: total reduction yielding exfoliation of CP
   b. T: reduction to *to*

R2: The subject A-moves to C, exfoliating CP; then moves to V in response to criteral φ-feature. Because CP has been exfoliated, a second application of Kinyalolo Dissimilation reduces T to *to*. **Result:** raising from an infinitivized clause.

R1: Like R2 above, except that the subject moves again to form a specifier of *v*P because the φ-feature on V was non-criterial. **Result:** raising from an infinitivized clause.

Subject Ā-movement yielding a *that*-trace effect: The subject Ā-moved to C, exfoliating CP. The ban on improper movement makes the φ-probe on V irrelevant to the next step of movement. The Ā-probe on *v* triggers the next step of movement, which does not trigger a second application of Kinyalolo Dissimilation (since VP intervenes between *v* and C). **Result:** movement from a finite clause lacking the complementizer.

Long-distance Ā-movement of a non-subject: A non-subject will move via the specifier of the embedded *v*P to form spec,CP in response to the Ā-probe on C. This does not trigger an application of Kinyalolo Dissimilation. The ban on improper movement again makes the φ-probe on the higher V irrelevant to the next step of movement — triggered by the φ-probe on the higher *v*, which once again does not trigger any application of Kinyalolo Dissimilation.

Kayne-paradigm Ā-movement: For *wager*-class verbs (and French *believe*-class verbs), the story is identical to R1, with a non-criterial φ-probe on R2 triggering the first step of movement — except that the second step of movement is triggered by the Ā-feature on *v*.

For the case of *assure*, V takes the first object as its specifier and CP as its complement. The embedded subject raises within CP, triggering exfoliative reduction to TP. The non-criterial φ-probe on V attracts that subject to it, forming a second specifier and triggering the same second step of reduction of embedded T to *to* seen in R1, R2 and Kayne-paradigm Ā-movement discussed above. From there, it is attracted by the Ā-probe on *v*.

French: like English, except almost not criterial R2 probes, and:
   a. reduced C due to Ā-probe → ***qui***
   b. reduced C due to A-probe → exfoliation as in English

Anti-agreement: Because interrogative C is criterial, when the Ā-feature on C attracts the subject, Kinyalolo Dissimilation must reduce T rather than C.

Speculative observation: Movement to criterial C prefers to affect Agreement on T (anti-agreement), while other movement that reduces T prefers to affect its TAM features. Unclear why.

Why does English not show anything like anti-agreement in a short-distance *wh*-question?

- Perhaps it does? Maybe the absence of T-to-C movement in short-distance subject questions is a sign that T has been slightly reduced so as to lack the feature that C targets to raise T.

(49) a. Who *(did) Mary visit ___?
   b. Who (*did) visit Mary?

Is there no ban on improper movement?

Part 4: Infinitivization and Control

9.   New thoughts about control

Not movement to controller …
Control phenomena *always* involve a distinct controller and controllee (e.g. PRO) — not movement between these positions.

…but the controllee undergoes movement nonetheless — to Spec,CP, in response to a φ-probe on C, creating a dissimilation environment. [Crucial, at least for non-hyper-control languages: the skipping strategy is unavailable for controllees.]

Challenges:
- **Infinitivization** (and other kinds of clause reduction) characteristic of control constructions must reflect local movement of the subject.

   What moves from subject position, why and to where?
   The controllee moves in response to a φ-probe on a complementizer that provides control, creating a Kinyalolo Dissimilation configuration.

- **Restructuring infinitives** (at least in German, where "long passive" is possible): these appear to involve control, but have been argued by Wurmbrand and others to be *very very very small* — a bare VP, in fact, lacking every normal component of a clause including *v*P.

   Why are they infinitival, and why are they control constructions if they lack vP and

therefore a syntactic position for the external argument?
I will suggest that they are somewhat bigger than has been claimed.

- **Character of the controllee:** *Why is the controllee often silent (PRO) or at most a weak overt pronoun (e.g. Bùlì)?*
  I will have something to say about this, but not a huge amount,

Proposal:

Control involves movement of a semantically vacuous phonologically null element to spec,CP, creating a predicate.

(50)   **Control configuration**

Mary planned [CP PRO C [__ to visit Tokyo]]

- **Semantic conjectures:**

(51)   **Control configuration denoting a property…**
Mary planned [CP PRO λx. C [x to visit Tokyo]]

(52)   **… and in fact can be used as a relative clause (a more obvious property)**
a. I am looking for a person [CP PRO λx. C [x to play Hamlet]]
b. The last person [CP PRO λx. C [x to leave]] should turn off the lights.

- "the element known as PRO functions as a property-creating abstractor" (Landau, building on Chierchia 1984)

- "More interesting are situations where the infinitive is headed by some functional category (Asp, T, Fin, etc.). These categories project phrases that are not natural predicates, and become predicative only with the aid of a syntactic operator. Thus, a clause is turned into a predicate by an operator merged at its edge, either externally or internally (by movement); the operator is later translated as a λ-abstractor. This device is put to use in relative clauses, toughconstructions, object purpose clauses, parasitic gap constructions, left dislocation, and copy-raising constructions [….]" Landau (2014) *A Two-tiered theory of Control*

- **Why is T reduced?**

  C is *criterial*, supporting (in some fashion) the interpretation of the embedded clause as controlled.

- **Why is control always cross-clausal, and why is the controlled position limited to the subject?**

  If control depends on a complementizer with a φ-probe, like the one that facilitates R1 and R2, then in general the controlled position will always be the subject of an embedded clause — so its controller will be clause-external.

But: Landau (2015) proposes that the clause-external controller is not necessarily the obvious argument in the visible higher clause. Attitude predicates select a phrase larger than the visible complement, which contains attitude-bearer arguments that are the proximate controller of PRO in the visible complement — hence the possibility of partial and split control (really partial/split control of attitude holder arguments in the intermediate projection).

- **Why does the controllee move following the same laws as any other nominal (the null case problem)?**

Instead of "null case", PRO receives normal NOM case and agrees with T in a normal fashion before infinitivization takes place. Argument from participle and secondary-predicate agreement:

(53)   **A derivational opacity argument for a reduction analysis of control infinitives**: NOM
        controllees in Icelandic
        Raising: NOM on subject overwritten by ACC, when subject raises into higher VP
        Control: NOM remains

a. Ég   tel   Maríu   hafa   verið tekna/*tekin   af lögreglunni.   **(R2)**
   I.NOM believed Maria.ACC to.have been taken.F.SG.ACC/*NOM by the.police
   'I believed Maria to have been taken by the police.'
b. Ég   bað   Maríu   að vera tekin/*tekna   af lögreglunni.   **(Control)**
   I.NOM asked Maria.ACC to be   taken.F.SG.NOM/*ACC by the.police
   'I asked Maria to be taken by the police.'
   (Thráinsson 1979:362–363)

a. Jón   taldi   Bjarna$_i$ hafa   hlaupið einan$_i$/*einn$_i$.   **(R2)**
   Jon.NOM believed Bjarni.ACC to.have run   alone.ACC/*NOM
   'Jon believed Bjarni to have run alone.'
   (B&H 2006a:601)

b. Ég   bað   hann$_i$ að fara einn$_i$/einan$_i$ þangað.   **(Control)**
   I.NOM asked him.ACC to go   alone.NOM/ACC there
   'I asked him to go alone.'
   (Thráinsson 1979:301)

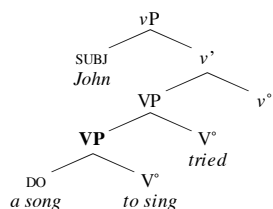   *apud* Bobaljik and Landau (2009)

… and the secondary predicate really is agreeing with PRO: the verb *bore* takes a DAT subject, and PRO is DAT, normal case behavior:

(54) (#)Jón   bað   hann   að leiðast   ekki einum.
     Jon.NOM asked him.ACC to be.bored not   alone.DAT
     'Jon asked him not to be bored alone.'
                                        (Bobaljik and Landau 2009, 116)

10. Restructuring (focusing on German)

(55) **Basic structure of German restructuring infinitival clauses according to Wurmbandt (1998; 2002)**

```
            vP
          /    \
       SUBJ     v'
       John    /  \
             VP    v°
            /  \
         VP     V°
        /  \    tried
      DO    V°
    a song  to sing
```

- **If v hosts both the external argument (and possibly all subject arguments) and assigns ACC case...**
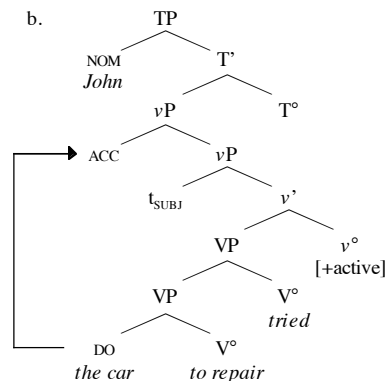
   ... what this entails about *control*:

- There must be a way to understand the agent of the embedded VP as identical to the external argument of the higher verb without the presence of an actual controlled PRO in the embedded clause.
- This does not entail that all control clauses should be analyzed as subjectless.

...what this entails about case:

(56) **ACC assignment in a restructuring infinitival clause comes from the higher *v*, since the lower VP has no case assigner of its own**

   a. weil   Hans   den Wagen   zu reparieren   versuchte
       since John   [the car]-ACC to repair   tried
       'since John tried to repair the car'

b.
```
                   TP
                 /    \
              NOM      T'
              John    /  \
                    vP    T°
                  /   \
            → ACC      vP
            |        /   \
            |    t_SUBJ   v'
            |           /  \
            |         VP    v°
            |        /  \   [+active]
            |      VP    V°
            |     /  \   tried
            └→  DO     V°
              the car  to repair
```

(57) *Long Passive*:
   passivize the upstairs verb, and it's the downstairs object that must move
   weil [der Lastwagen und der Traktor] zu reparieren versucht wurden/*wurde
   since [the truck and the tractor]-NOM to repair   tried   were/*was
   meaning: 'since somebody tried to repair the truck and the tractor'
   but literally: 'since the truck and the tractor were tried to repair'

(58) **Long Passive structure**
```
                   TP
                 /    \
          →   NOM      T'
          |          /  \
          |        vP    T°
          |      /   \   were
          |    VP     v°
          |   /  \    [-active/-ACC]
          |  VP    V°
          | /  \   tried
          └ DO    V°
[the truck &   to restore
 the tractor]
```
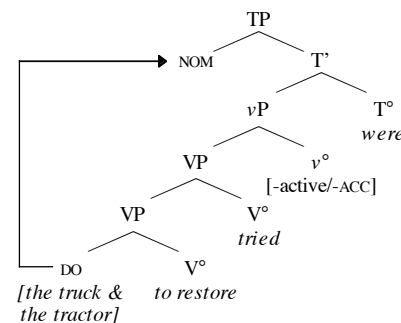
- **Supporting evidence: when long passive (or long-distance scrambling, also unique to restructuring clauses) takes place ...**
   o an inherent or benefactive reflexive is excluded (no local subject)
   o the embedded clause cannot have its own tense semantics (no T)
   o the embedded clause cannot has its own negation (no NEG)

   ... so it is **so small that it lacks an external argument position, tense, negation, and the ability to assign ACC** —
                        but not so small that it lacks the verb itself.

11. restructuring → no PRO to bind an inherent or benefactive reflexive

- Verbs that can take a restructuring complement can also take a full CP complement (and produce non-long passives, including impersonal passives

(59) **No restructuring, impersonal passive →**
                              ok *sich* in embedded clause with subject antecedent

  a.   *Es wurde beschlossen*
      it was   decided
      [PRO$_i$ *sich$_i$ den   Fisch mit Streifen vorzustellen*]
       PRO$_i$ SELF$_i$ the-ACC fish with stripes to-imagine
      'They decided to imagine what the fish would look like with stripes.'
  b.   *Es war notwendig* [PRO$_i$ *sich$_i$ einen Wagen zu kaufen*]
      it was necessary   PRO$_i$ SELF$_i$ a-ACC car   to buy]
      'It was necessary to buy oneself a car'
  c.   *Es wurde versucht* [PRO$_i$ *sich$_i$ den   Fisch mit Streifen*
      it was   tried   PRO$_i$ SELF$_i$ the-ACC fish   with stripes
      vorzustellen]
      to-imagine
      'People tried to imagine what the fish would look like with stripes.'

(60)   **Yes restructuring, long passive →**
                                  *sich in embedded clause with subject antecedent

  a. *... *weil* {*sich*} *der*   *Fisch* {*sich*} *vorzustellen versucht wurde*
       since {SELF} the-NOM fish {SELF} to-imagine tried   was
       '...since somebody tried to recall the image of the fish.'
  b. ... *weil* {*sich} *der*   *Turm* {*sich} *zu bauen versucht wurde*
       since {*SELF} the-NOM tower {*SELF} to build tried   was
       '...since somebody tried to build (*himself) the tower.'

12. long passive → no negation in the embedded clause

(61)   **No restructuring, non-long passive →**
                        embedded clause may contain negation
  a. *weil dem Hans*   [*den Spinat*   *nicht zu essen*]
     since the John-DAT [the spinach-ACC not   to eat]
     erlaubt   wurde
     allowed   was
      %'since John was not allowed to eat the spinach'
      'since John was allowed not to eat the spinach'
  b. *weil* [*den Kuchen nicht zu essen*] *versucht wurde*
     since [the cake-ACC not   to eat]   tried   was
      %'since they didn't try to eat the cake'
      'since they tried not to eat the cake'
  c. *weil dem Hans*   [*den Kuchen nicht zu essen*]
     since the John-DAT [the cake-ACC not   to eat]
     gelungen ist
     managed is
      %'since John didn't manage to eat the cake'
      'since John managed not to eat the cake'

(62)   **Restructuring, long passive →**
                        embedded clause may not contain negation

  a. *weil dem Hans*   [*der Spinat*   *nicht zu essen*]
     since the John-DAT [the spinach-NOM not   to eat]
     erlaubt   wurde
     allowed   was
      'since John was not allowed to eat the spinach'
     *'since John was allowed not to eat the spinach'
  b. *weil* [*der Kuchen   nicht zu essen*] *versucht wurde*
     since [the cake-NOM not   to eat]   tried   was
      'since they didn't try to eat the cake'
     *'since they tried not to eat the cake'
  c. *weil dem Hans*   [*der Kuchen nicht zu essen*]
     since the John-DAT [the cake-NOM not   to eat]
     gelungen ist
     managed is
      'since John didn't manage to eat the cake'
     *'since John managed not to eat the cake'

13. restructuring → no independent tense in the embedded clause

(63)   **No restructuring → tense mismatch possible**

    a.   *Hans   erlaubte   dem Kind*
         John   allowed   the child-DAT
         (?*morgen*)   *einen Kuchen   zu essen*
         (?tomorrow)   a cake   to eat
         'John allowed the child to eat a cake (tomorrow)'

    b.   *Hans   verbot   dem Kind*
         John   forbade   the child-DAT

         (?*morgen*)   *einen Kuchen   zu essen*
         (?tomorrow)   a cake   to eat
         'John forbade the child to eat a cake (tomorrow)'

    c.   *Hans   empfahl   dem Kind*
         John   recommended the child-DAT
         (?*morgen*)   *einen Kuchen   zu essen*
         (?tomorrow)   a cake   to eat
         'John recommended to the child to eat a cake (tomorrow)'

    d.   *Hans beabsichtigte (morgen) einen Brief zu schreiben*
         John   intended   (tom.)   a letter   to write
         'John intended to write a letter (tomorrow)'

(64)   **Restructuring → no tense mismatch possible**

    a.   *Dem Kind   wurden   nur Kekse*
         the child-DAT   were   only cookies
         (*morgen)   *zu essen   erlaubt*
         (*tomorrow)   to eat   allowed
         'The child was only allowed to eat cookies tomorrow'

    b.   [[t$_{OBJ}$ {*Morgen}   *zu essen*] *erlaubt*]$_{VP}$ *wurden*
         [[t$_{OBJ}$ {*Tomorrow} to eat   ] allowed]$_{VP}$ were
         dem Kind   {*morgen}   *nur die Kekse*
         the child-DAT   {*tomorrow}   only the cookies
         'Only cookies were such that the child was allowed to eat
         them tomorrow'

    c.   *Dem Kind   wurden   (gestern)*
         the child-DAT   were   (yesterday)
         nur Kekse   *zu essen   erlaubt*
         only cookies   to eat   allowed
         'The child was only allowed to eat cookies (yesterday)'

    d.   *Dem Kind   wurde   erlaubt*
         the child-DAT   was   allowed
         (?*morgen*)   *einen Kuchen/Kekse   zu essen*
         (?tomorrow)   a cake-ACC/cookies   to eat
         'The child was allowed to eat a cake/cookies (tomorrow)'

14. How small are restructuring clauses really? And what part is small?

Sketch of an alternative:

- **German restructuring clauses are "full" insofar as they start out, like all clauses, with CP and TP layers** — i.e. they start out full and finite, and even contain a full and normal *v*P…

- … but from the beginning, **they are missing layers between *v*P and TP** that non-restructuring clauses have.

  This possibility is not a shock, since (for example) layers of the English auxiliary verb system can be fully missing. The absence of TemporalP, PolarityP and perhaps more layers between *v*P and TP is the special property that characterizes German restructuring clauses.

  (accounts for lack of independent tense and ability to negate)

- **Control involves a null element like PRO,** which moves to spec,TP and from there to spec,CP like controlled PRO in fuller clauses…

  (so no need for semantic magic alongside conventional PRO)

- … but this null element lacks features found in controlled PRO within larger clauses — call it **PRO*min*,** with the following consequences:
  - it cannot antecede a reflexive
  - it does not count as a case-competitor for the assignment of ACC to the object
  - it does not count as an intervener for a higher case-competitor or probe

(65)   **Restructuring that includes a controlled subject**
    Restructuring in German involves PRO after all — but a version of PRO that is featurally so small it does not antecede reflexives, act as a case competitor, or count for minimality (**PRO*min***).

Why the subject of a restructuring clause is super-small "PRO*min*":

(66)   **Satık's generalization** (2022):
    The size of the subject of a clause correlates with the size of the clause.

(67) **How to explain Satık's generalization**
    a. **Featural demands of heads:** Individual heads in the clausal spine search for a nominal that bears certain specific features. (As a consequence, the more such heads are present in a clause, the more feature-rich the nominal must be.)   [not in Satık's paper]
    b. **Economy condition** (Satik, building on Cardinaletti & Starke 1999): Minimize featural content.

Baker's observation concerning nominal richness and ability to license dependent case

(68) **Dependent case-relevant nominal hierarchy**
Overt >   pro > controlled > arbitrary > implicit agent of > PP, VP, etc.
NPs   PRO   PRO   passive
and clitics   agent of nominal
                                             nonspecific object

- "The idea is that categories to the right on this scale have a subset of the nominal features that categories to their left on the scale have. Languages then vary as to which of these features is minimally necessary in order to participate in dependent case assignment." (Baker 2015)

- **Sakha:** even implicit agent of passive and of deverbal nominalizations trigger ACC
- **Turkish, Tamil, Amharic...:** PRO and *pro* yes, but not implicit agents of passive etc.
- **Finnish...:** not uncontrolled PRO, but yes controlled PRO
- **Cuzco Quechua...:** *pro* but not PRO (be careful about restructuring!)
- **Coast Timshian:** neither *pro* nor PRO of any sort

(69) **PRO$_{min}$ and Long Passive**

German PRO$_{min}$ is too featurally small to
    (1) license dependent ACC
    (2) serve as an antecedent for reflexives
    (3) count as an intervener for movement triggered by a higher φ-probe

Analysis:

- A German restructuring clause is generated with a full C and T, but nothing else besides *v*P.
- Therefore, by (67) the subject that starts out in *v*P has minimal featural demands placed on it, and therefore is minimal itself: PRO$_{min}$.
- The interpretation of an element as small as PRO$_{min}$ must involve control, so C must be the control version of the complementizer — and PRO$_{min}$ raises to form spec,CP, triggering reduction to an infinitive.
- *Zu* is just a normal infinitival T, Control involves no magic — but the control