1 Introduction

Brief Overview of Minimalism so far

1. **Selection** of LIs to form the **Numeration**
2. LIs have features, including **Uninterpretable features**, uF
3. uFs must be **checked** and then deleted before LF
4. uFs are checked when sister to an LI with a matching F feature
5. **Merge** and **Move** are triggered by the need for feature-checking

**Full Interpretation:** The structure to which the semantic interface rules apply (LF) contains no uninterpretable features.

**The Checking Requirement:** Uninterpretable (c-selectional) features must be checked; once checked, they can delete.

**Checking Under Sisterhood:** An uninterpretable c-selectional feature F on a syntactic object Y is checked when Y is sister to another syntactic object Z which bears a matching feature F

**The Inclusiveness Condition:** The LF object λ must be built only from features of the lexical items of the numeration. *(Hornstein et al., 2005)*

**The Extension Condition:** A syntactic derivation can only be continued by applying operations to the root of the tree.

---

2 Binary Merge and Causative Little v

- Previously we allowed for ternary (3-way) branching:
- But **Merge** is strictly binary, which means that the VP *show Harry (to) himself* cannot be represented that way!
- **Q:** So what sort of structure should it have?

**Hypothesis 1:**

```
VP
  V  PP
    V  DP
      P  DP
        show
dp
         P
          dp
            X'
              PP
                P
                  dp
                    X
                      dp
                        to
                          X
                            PP
```

**Hypothesis 2:**

```
VP
  XP
   V
      PP
        DP
          X
```

**Student Exercise:** These two structures make different predictions regarding whether or not the string *Harry to himself* is a constituent.

Does the data below support Hypothesis 1 or Hypothesis 2?

(1) The Conjunction Test

a. The mirror showed [socks to Dumbledore] and [great success to Ron]

b. Luna gave [[her transfiguration homework]DP [to McGonagall]PP] and [[her herbology homework]DP [to Professor Spout]PP]

The Fragment Test

a. Q: What did the mirror show?
   A: Socks to Dumbledore, and great success to Ron

b. Q: What did Hermione receive?
   A: An invitation from Krum and hatemail from Harry Potter fans.

- **Binding Principle A**: Reflexives like *himself* must be c-commanded by their antecedent (see figure 1)

Evidence from anaphoric reflexives: *himself*

a. Harry$_i$ saw himself$_i$.

b. *Himself$_i$ saw Harry$_i$.

c. #[James$_i$’s son]$_i$ saw himself$_i$

d. [James$_i$’s son]$_i$ saw himself$_i$

Using the binding data as a diagnostic, which hypothesis is preferred, Hypothesis 1 or Hypothesis 2?

→ Hypothesis 2!

**Q**: So what is this mystery XP projection?

**Intuition**: show = cause to see
give = cause to have

These kinds of causatives can be marked with overt morphology:

(4) nitáása’ni  
   annahk Amelia nitáása’notok
   nit-waasaá’ni  
   annahk Amelia nit-waasaá’ni-oto-ok
1-cry.vai  
   dem Amelia 1-cry.vai-caus-3:1
   “I cried”
   “Amelia made me cry”

(5) annahk  
   Amelia 1-cry.vai-caus-3:1
   Amelia
   “Amelia made me cry”

- **Idea 1**: The causative occupies a functional head (call it v) that selects VP

**Malagasy Causative an** (Hung 1988)

- m-an-sasa  
  ny lamba (amin ny savony) Rasoa
  pres-act-wash the clothes (with the soap) Rasoa
  “Rasoa washes the soap (with the soap).”

(6) áipottsipistaa  
   á-ipottsipistaa-wa
   impf-braids.vai-3
   “She wears braids.”

(7) nitsipóttsipistowa  
   nit-waasai’ni-oto-ok
   impf-braids.vrt-caus-3
   “Amelia made me cry”

(8) Rasoa washes the soap (with the soap).”

• Chomsky 1995: English has (null) causatives like this!
• The causative head, *v*, projects a *vP*, which introduces the **CAUSER/AGENT**
• Main verbs raise to this position to derive the correct word order

![Diagram showing word order derivation]

Questions to Consider: Head Movement

- Q: What triggers the **HEAD MOVEMENT** of the main verb?
  → In a Minimalist approach to syntax, everything must be justified!
- LAST RESORT: There are no superfluous steps in a derivation (Hornstein et al. 2005)
- Q: Doesn’t **HEAD MOVEMENT** violate **The Extension Condition**?

3 The Operations Move (Copy + Merge), and Agree

3.1 Move = Copy + Merge

- Q: Do we really need the **Move** operation?
- Chomsky 1995:

  1. **Merge**: Applies to two objects, *α* and *β*, and forms a new object, *γ*

     ![Merge diagram]

  2. **Move**: Applies to a phrase marker, *β*, with constituents *α* and *δ*, Move copies *α* and Merges *α* with *β* to form the new object *γ*

     ![Move diagram]

- Causer/Agent DPs merge to satisfy an [uD] on *v*
- Agents are associated with the [spec, vP] position; they move to [spec, IP] to check an [NOM] Case feature
• Chomsky 2001:
  1. External Merge: \( \alpha \) and \( \beta \) are separate objects
  2. Internal Merge: \( \alpha \) and \( \beta \) stand in the part-of relation
→ i.e., Move is just another kind of Merge
• But Chomsky 1995 and Chomsky 2001 still need an operation that copies a portion of the phrase marker - i.e., an operation \textit{Copy}
• These ways of formalizing movement are often referred to as the \textit{Copy Theory of Movement}
• These theories do not require \textit{traces} as theoretical entities:
   → Minimize theoretical entities!

(9) John seemed to be examined by the doctor \textit{raising}  
≈ The doctor seemed to examine John
a. LF: [ the doctor seemed [ ⟨the doctor⟩ to examine John]]
b. LF: [John \textsubscript{i} seemed [ ⟨John⟩ to be examined ⟨John⟩ by the doctor]]

• \textbf{Idea:} \textit{Copy} independently required to select items from the lexicon into the numeration (i.e., \textit{Select} = \textit{Copy})
   → Minimize syntactic operations!

\textbf{The Inclusiveness Condition:} The LF object \( \lambda \) must be built only from features of the lexical items of the numeration. (Hornstein et al. (2005))

• Q: But do we really need copies? Why don’t we just re-merge \( \alpha \)?
   → Minimize theoretical entities!

3.2 Evidence for Copies
• There are cases where copies seem to be phonologically produced:

(10) Afrikaans Wh-Movement (Hornstein et al. 2005)
  \textit{met wie}  \textit{het} \textit{ja} \textit{nou weer gesê} \textit{met wie}  \textit{het} Sarie gedag
  \textit{with who}  \textit{have you now again said} \textit{with who} did Sarie thought
  \textit{met wie} \textit{gaan} \textit{Jan trou?} \textit{with who} \textit{go} \textit{Jan marry?}
  ’Who(m) did you say again that Sarie thought Jan is going to marry?’

• There are cases where moved NPs seemed to be interpreted in their original Merge position\textsuperscript{1}

(11) Japanese Long-Distance Scrambling (Bošković & Takahashi 1998)\textsuperscript{2}
  sono hon-o, John-ga [Mary-ga ⟨sono hon – o⟩ katta to]
omotteiru
thinks
  “John thinks that Mary bought that book.”

• In a Copy Theory of Movement, we are just interpreting the lower copy
• In GB, this sort of phenomenon was called “LF-Reconstruction,” and it required covert, downward movement, which was problematic in that
  (i) overt cases of downward movement were usually ruled out, and
  (ii) covert movement and overt movement should be subject to the same restrictions.

\textbf{The Uniformity Condition} The operations available in the covert component must be the same ones available in the overt syntax.

\textsuperscript{1}Although as a semanticist, I suggest taking this evidence with a grain of salt, since there’s often more than one way to semantically skin a cat, but many syntactic frameworks assume only a single method (without making this single method explicit).
\textsuperscript{2}The data is taken from Bošković & Takahashi 1998, but I should point out that Bošković & Takahashi 1998 take a very interesting (and unorthodox) approach to scrambled elements, proposing that scrambled elements are actually base-Merged into their surface position (adjoining to IP), and then undergo covert lowering. Although both approaches to scrambling “require” that some unpronounced copy is interpreted at a position distinct from the pronounced copy.
4 Covert Movement and Minimalism

→ Minimize syntactic operations!

- In a minimalist framework, do we really want an invisible movement operation? How can we minimally account for long-distance dependences?

4.1 Agree: Checking without Overt Movement

- Recall The Extension Condition: A syntactic derivation can only be continued by applying operations to the root of the tree

→ But Affix-Hopping requires downward movement!

**Transformational Rule:** Affix Hopping

"When you encounter the sequence “affix-verb,” move the affix to the immediate right of the verb."

- One Minimalist approach to the complementary distribution between modals/auxiliaries and verbal inflection:

**AGREE:** An uninterpretable feature F on a syntactic object Y is checked when

(i) Y is in a c-command relation with another syntactic object Z, and
(ii) Z bears a matching feature F.

- While categorial features (e.g., selectional restrictions) require **Checking Under Sisterhood** and **Merge**...

- ...Non-categorial features can be checked under C-Command via **AGREE** (Adger 2003)\(^3\)

- Verbs come from the lexicon fully inflected
  - **Past-tense inflected verbs:** [uPast]
  - **Present-tense inflected verbs:** [uPresent]

- These uninterpretable tense features, given **The Checking Requirement**, must be deleted before LF

- But so long as Infl has an interpretable tense feature, eg., [Past], the verb’s [uT] features can be checked via **AGREE** and then deleted:

\(^3\)Under this approach, because Case features trigger movement, we must assume that Case is a categorial feature!
4.2 Move-F: Checking without Overt Movement

- ...but do we really need to add another operation like Agree?
- The Move F Approach to Agreement:
  (i) All [uF]s require movement, and are checked under sisterhood, just like categorial features...
  (ii) But [uF]s can be either weak or strong
  (iii) While strong [uF]s require movement of the entire phrase...
  (iv) ...weak [uF]s allow movement of just the formal features
- This leaves the phonetic features where they initially merged\(^4\)

4.3 More on Strong vs Weak Features

- The Strong/Weak distinction was originally proposed to differentiate between overt and covert movement:\(^5\)
  (i) Strong Features: Phonologically “indigestible“ and must be checked before Spell-Out (i.e., before the phrase structure is sent to PF) (Hornstein et al. 2005:39)
  (ii) Weak Features: Phonologically palatable; only need to be checked by LF
- The lack of wh-movement in languages like Mandarin is treated as the [WH] feature being weak, while the [WH] feature in English is strong
- Question: What stops the derivation from checking weak features early (i.e., optional overt movement)?

\[^4\]Saito 2003 has a derivational approach to movement where each copy of a DP consists of D(thematic)-features, P(honetic)-features and O(perator)-features. The survival of these features (i.e., non-deletion) at particular copies determines where the DP is thematically, phonetically and quantificationally “interpreted.”

\[^5\]Under this approach, Case movement occurs because case features are strong.

- Another option: Wh-words are interpreted in-situ as choice-functions, in the style of Reinhart (1998)
- The Agree and Move-F approaches were proposed to deal with empirical problems with the original strong/weak approach to covert/overt movement (see Hornstein et al. 2005)

5 Minimalism: Summary So Far

- The Minimalist Program is not a theory, but a set of guiding principles for how to do syntactic analysis
- Basic Principle: As little as possible! Only posit what you have to.
- Particular Principles (discussed so far)
  1. Full Interpretation
  2. The Extension Condition
  3. The Inclusiveness Condition  
      → Minimize theoretical constructs!
  4. Last Resort  
      → Minimize movement!
  5. The Uniformity Condition  
      → Minimize (types of) movement!
  6. Procrastinate

- That said, most syntactic analyses within the Minimalist approach assume:
  1. Binary Merge
  2. Feature-driven Movement (where movement can be formalized in different ways)
  3. The existence of the agent-introducing little v
- Next Week:
  - Phases and the Phase Impenetrability Condition (PIC)
  - Linearization and Spell-Out


