Handout: Some notes on Chomsky 2013*

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1 Preliminaries: phase-based minimalist syntax and Feature Inheritance

- Chomsky (2000, 2001): Spell-Out/Transfer sends syntactic structures to the interfaces for interpretation in chunks. Syntactic domains relevant to Transfer are called phases. Proposed phase heads are $v^*$ and C. Complement of phase head is Transferred.

(1)  \textit{Phase Impenetrability Condition} (Chomsky 2000:108)  
In phase $\alpha$ with head H, the domain of H is not accessible to operations outside $\alpha$, only H and its edge are accessible to such operations.\footnote{"Given $HP = [\alpha[H \beta]]$, take $\beta$ to be the domain of H and $\alpha$ (a hierarchy of one or more Specs) to be its edge." (Chomsky 2000:108)}

- Elements which must remain accessible to operations beyond the phase must undergo internal Merge (IM) to the phase head or its projections.

- Rob Truswell (p.c.): Perhaps the most convincing empirical evidence for phases is Abels (2003)'s Stranding Generalization: elements inside the complement of a phase head may avoid Transfer by IM to the phase head or its projections, but the entire complement of a phase head cannot. (See also Abels 2012.)

- Why Transfer phase head complement instead of phase?

- Chomsky (2001:8): one-to-one association between C and $\phi$-complete T: $T_{comp}$ is selected by C, $T_{def}$ is selected by V. $\rightarrow$ Chomsky (2007, 2008): T inherits its (uninterpretable) features from C. (Feature inheritance (FI))

- FI should hold for all phase heads.

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Richards (2007): Why FI?

- After valuation of uFs by Agree, uFs and iFs are identical, but uFs at interfaces cause crash → Phase head (containing uFs) must be Transferred immediately.
- If phase head is Transferred, no label remains for further computation → Phase edge must be Transferred separately from phase head complement.
- Contradiction! Solution: Phase head gives its uF to non-phase head. FI!

- Not all operations apply cyclically within the phase: if T inherits its uFs from C, then logically, C must Merge before T can probe the subject, since it is uφ which is the probe.

- All operations within a phase (except external Merge (EM)) apply (simultaneously) at the phase level. (See also Hiraiwa 2001.)

Chomsky (2008:147): Subject island violations: structures involving transitive v* are judged unacceptable (see (2)), while those involving unaccusative/passive v are not (see (3)).

(2) *Of which car did [the driver cause a scandal]
(3) Of which car was [the driver awarded a prize]

- It is the base position of the subject which is relevant. This distinction must available when C is Merged. If the subject raises to Spec-TP before Merge of C, the distinction is lost. However, if the subject remains in its base position until C is Merged, the distinction is available.

Kitahara (2011) (See also Chomsky 2013:43.): Why is T→C movement attested in language but D→C movement not, since D and T are equidistant from C?

Kitahara (2011): Solution: since T inherits its features from C, when C is Merged, the subject is still in its base position. Now, T and D are not equidistant from C: T is closer to C.

\[ \text{CP} \]
\[ \text{C} \]
\[ \text{TP} \]
\[ \text{DP}_i \]
\[ \text{T'} \]
\[ \text{D} \]
\[ \text{NP} \]
\[ \text{T} \]
\[ \text{VP} \]
\[ < \text{DP}_i > \]
\[ \text{V'} \]
\[ \text{V} \]
\[ \text{DP}_j \]

Chomsky (2007:6) compares derivations within the phase in this way to the construction of formal proofs: “Intuitively, the proof “begins” with axioms and each line is added to earlier lines by rules of inference or additional axioms. But this implies no temporal ordering. It is simply a description of the structural properties of the geometrical object “proof”.”

For insightful discussion revealing serious problems with this approach, see Carstens, Hornstein, and Seely 2013.
• Labels in Chomsky (2008:141): “Each SO [syntactic object] generated enters into further computations. Some information about the SO is relevant to these computations. In the best case, a single designated element should contain all the relevant information: the label”. Syntax is not label-free in Chomsky 2008’s approach: “the label selects and is selected in EM, and is the probe that seeks a goal for operations internal to the SO: Agree or IM.”

(4) Labelling algorithm (Chomsky 2008:145)\(^4\)
   a. In \{H,α\}, H an LI, H is the label.
   b. If α is internally merged to β, forming \{α, β\} then the label of β is the label of \{α, β\}.

2 Label-free syntax

• Chomsky (2013:36): “order and other arrangements are a peripheral part of language, related solely to externalization at the SM interface”. Language is structure-dependent.

(5) can eagles that fly swim?
(6) instinctively, eagles that fly swim

• Why not linear distance? Chomsky (2013:39): because there is no linear order in narrow syntax. Narrow syntactic operations generate linearly unordered sets.

• Chomsky (2013:43): Label\(^5\) is not part of Merge but is an independent operation.\(^6\)

• Noam Chomsky (p.c.): Labels are necessary for interpretation.

(7) the book John read
   a. \[[DP [the book] [\text{CP } Op C [\text{TP } John read <Op>]]]\]
   b. \[[\text{CP } C [\text{FocP } [the book] Foc [\text{TP } John read <the book>]]]\]

\(^4\)Labelling ideally reduces to (unambiguous) minimal search (Chomsky 2008:145). Chomsky (2008:145) also claims that the labelling algorithms apply freely.

\(^5\)The term Label refers to the operation proposed by Chomsky (2013), whereas the term label refers to the output of this operation.

\(^6\)I believe that Chomsky (2013)’s proposal is essentially different from that of Collins (2002), further investigated by Seely (2006), since whereas Collins (2002) seeks to eliminate labels entirely, Chomsky (2013) wants to eliminate them only from the narrow syntax. Thanks to Daniel Seely for disagreeing with me on this point, and forcing me to think harder about it. For extensive commentary on this point, see the full version of the present paper.
Chomsky (2013:43) (following Chomsky 2008): Labelling is essentially minimal search

(8) \( \{H,XP\} \)

Chomsky (2013:43): (8) will be Labelled ‘H(P)’.

(9) \( \{v,\{V,DP_i\}\} \)

(10)

Note that the label of \( \{V,DP_i\} \) must be available before \( \{v,\{V,DP_i\}\} \) can be Labelled, since the label of \( \{V,DP_i\} \) serves as input to the algorithm which has as output the label of \( \{v,\{V,DP_i\}\} \). In other words, the Labelling algorithm must apply from bottom to top.

(11) \( \{XP,YP\} \)

Chomsky (2013:43): 2 Labelling possibilities for (11)

- If one constituent undergoes IM, the label will be the label of the in situ constituent.
- If an Agree relation holds between the two constituents, the label is the feature involved.

(12) \( \{C,\{T,\{DP_j,\{vP,\ldots\}\}\}\} \)

(13)

In the examples presented here, the graph-theoretic notation is used only for ease of exposition. Recall that (simplest) Merge is an operation which applies to lexical items (LIs) and (previously constructed) syntactic objects (SOs), and puts them into binary sets (Chomsky 2000, 2001, 2007, 2008). Note also that \( DP \) in (9) and subsequent examples refers to a set-theoretic object previously generated by Merge. The Labelling of this object is part of the object of inquiry of this paper.

In (12), recall that, given FI, C is Merged before IM of the subject to TP, since T inherits its uF from C.
3 Labelling complex heads

- Chomsky (2013:46-47): problems of complex heads and structures consisting of two Merged LIs for the purposes of Label.

(14) \{X,Y\}

- Two types of structures:
  - a complex head, created in the course of a derivation, for example by T→C movement;\(^9\)
  - Merge of two LIs.

(15) \{the,peanuts\}

- Label (i.e. minimal search) applied to this SO will not unambiguously identify a more prominent element. There is no obvious feature involved in Agree here which could serve as the label either.

- Chomsky (2013:46) identifies a similar problem with pronouns: a pronoun X may undergo EM as the external argument to a verbal structure, resulting in a structure similar to that in (16).

(16) \{he,v*P\}

- However, *he cannot be a head. If it was, the SO in (16) would incorrectly be labelled ‘DP’/‘NP’. Chomsky (2013:46) therefore proposes that pronouns must not be heads, but a more complex syntactic object (“perhaps D-pro”).

- The problem: minimal search does not yield an unambiguous result.

- One solution (also noted by Chomsky (2013:47)) is that LIs do not appear simply as heads in syntactic structures but as complex heads composed of a (category-less) root (\(\sqrt{\}) and a category-defining head (n, v, a, etc.).

(17) \{c, \sqrt{\}\}

- Label applied to such a structure will not result in an unambiguous result: neither \(\sqrt{\}) nor \(c\) is more prominent than the other, and there is no feature checking involved between them. However, if we allow ambiguous search to result in each head independently projecting in a different structure, as in (18), only one will converge at the interfaces.

(18) a. Convergent

\[ cP \\
\sqrt{c} \]

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\(^9\)Recall that in Chomsky 1995, 2000, it was proposed that head movement is in fact not a syntactic operation but a post-syntactic one. It might, then, be the case that complex head structures are not created in the course of the derivation, and that Label does not apply to such structures because they do not exist. However, given the discussion of T→C versus D→C in Kitahara 2011 and Chomsky 2013, head movement is syntactic in the current system. These complex heads will not be discussed here.
b. Nonconvergent\(^{10}\)

\[
\begin{array}{c}
\sqrt{P} \\
\sqrt{c} \\
\end{array}
\]

- This, of course, leads to asking whether ambiguous results for Label could only be true in the case of head-head structures. If it is possible to generate all labelling possibilities for all SOs and filter out the nonconvergent derivations at the interfaces, there is no need for a labelling algorithm in the first place. This requires further investigation.

- There is at least one more possibility for Labelling head-head structures. Suppose, as suggested by Svenonius (2004) and Marušič (2005), that DP is a phase. This means that the complement of D is Transferred to the interfaces. Essentially, as argued by Richards (2007), phase heads must be Transferred separately from their complements, in order to provide a label for further computation. At the moment of Transfer, then, only the complement of D must have a label.

\[
\begin{array}{c}
\{D,N\} \\
D \rightarrow N
\end{array}
\]

- Assuming D is a phase, its complement undergoes Transfer and must have a label. Since N is the only item in the Transfer domain, the SO has the label ‘N’. This results in the structure in (20).\(^{11}\)

\[
\begin{array}{c}
D \rightarrow\quad NP \\
| \quad \quad N
\end{array}
\]

\[
\begin{array}{c}
DP \\
D \rightarrow\quad NP \\
| \quad \quad N
\end{array}
\]

- Unfortunately, such an approach will not get us very far, since it requires that one item in every head-head structure is a phase head. This is simply not true in the majority of cases.

**References**


\(^{10}\)Chomsky (2013:47) suggests that certain elements, such as roots and conjunctions, simply do not qualify as labels. He is not explicit as to whether this qualification is relevant at the application of Label or at the interfaces.  

\(^{11}\)Text in gray in syntactic structures indicates that the elements have been Transferred.


