

## Derivation by Phase<sup>1</sup>

### 1. The Rules So Far:

#### Agree

For a probe and a goal to Agree:

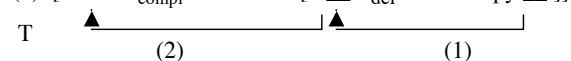
- probe and goal must *both* be active (=have uninterpretable features)
- the goal must be the *closest* instance of the Agreeing feature to the probe

Having two constraints leaves open the possibility of *defective intervention* effects: a close, inactive Goal blocking a lower, active Goal from agreeing with a Probe.

- A feature is uninterpretable iff it is also *unvalued*.  
Advantage: The syntax can detect an uninterpretable feature by simple inspection of its value.
- Agree deletes features  $\phi$  on  $\alpha$  iff  $\beta$  is  $\phi$ -complete:  $T_{def}$  is  $\phi$ -incomplete, for example.

#### Move

- Move = Agree + Determine Pied-Piping + Merge:  
 Some features (like EPP) aren't satisfied by Agree alone, and force Move

(1) [Susan  $T_{compl}$  seems [  $\_$   $T_{def}$  to be sleepy  $\_$  ]]  


**Move (1):**  $T_{def}$  has  $\phi$ -features, *Susan* has Case-features, both Active: they Agree. *Susan's*  $\phi$ -features are complete, so  $T_{def}$ 's  $\phi$ -features delete.  $T_{def}$ 's features are incomplete, so *Susan's* Case feature remains. EPP forces actual movement to Spec, TP

**Move (2):** mutual annihilation:  $T_{compl}$  has complete  $\phi$ -features, as does *Susan*, so both lose their uninterpretable features and become inactive.

[T has no Case feature, but *Susan's* can still be deleted, via Match of the  $\phi$ -features. No, this doesn't follow from anything...]

### Alternative approach to (1) (with two independent parts?)

#### currently:

C selects  $T_{compl}$ ; V selects  $T_{def}$

#### alternatively:

C is  $\phi$ -complete: T is  $\phi$ -complete only when necessary. (p.8)

"necessary"=in order to delete uninterpretable  $\phi$  on a selector.

[So C has some  $uF$  satisfiable by the TP that it embeds.]

$C_{compl}: T_{compl} :: V_{compl}: V_{compl} \rightarrow$  Burzio's Generalization

[ $v^*$  with EA has some  $uF$  satisfiable only by the VP that it embeds.]

Selection (partly) reduces to conditions on deleting uninterpretable features

and if  $C:T :: v:V$ , then T is maybe (like V) sort of substantive rather than functional?

~~HP~~ EPP= $\phi$ -completeness  $\rightarrow$  no successive-cyclic movement to Spec of defective T, just Agree.

### Strong Phases: $v^*P$ (transitive $vP$ )

maybe DP  
 maybe PP?

= "propositional" categories

- Phases are the functionally headed XP s (if T is a substantive, i.e. lexical (N-like), head.
- Non-phases can't be extracted stranding their functional head.
- Phases furnish reconstruction sites for scope and binding.

### 2. Phases and Cyclic Spell-Out

**PIC:** for HP a strong phase dominated by a strong phase ZP;

the domain of  $H^2$  is not accessible to operations at ZP, but only H and its edge

#### Maximize matching effects:

cf. Pesetsky's (1989) *Earliness*, Chomsky (1995)'s *Strength*, Richards' (1997) *Featural Cyclicity*

<sup>1</sup> This handout is Norvin's, edited here and there, except for the last section.

<sup>2</sup> domain of H = what H c-commands.

- (2) [ C [ T be likely [there to arrive a man]] ]
- T, *there* Agree in [person]  
[u person] deletes on *there*, but T remains untouched  
(because *there*'s  $\phi$ -set is defective)
  - EPP forces raising of *there* to Spec TP
  - T, *a man* Agree in  $\phi$ -features  
*a man*'s Case feature deletes, T's  $\phi$ -features delete

**Why couldn't *a man* satisfy the EPP-feature of T?**

- (3) \*[ C [ T be likely [there to arrive a man]] ]

**Answer:** Violates "Maximize Matching": *there* may Agree with T first, and may check EPP. By MM, since it may, it must. (EPP is a feature, sort of like any other, soft of, sort of...)

**Why doesn't *there* block Agree of T with *a man*?**

Because it moves to Spec TP, and:

- (4) • Only the *head* of an A-chain is visible for the MLC

### 3. And of course you've been wondering about...<sup>3</sup>

- (5) [ C [ T seem [there to have been [caught several fish]]]]
- In Icelandic (but not Romance, Mainland Scandinavian), *caught* agrees with *several fish* — in Case as well as in number and gender. No person agreement!
  - The  $u\phi$ -features of *caught* are matched with [and are expected to delete under] Agree with *fish*. Because *caught* is  $\phi$ -incomplete (no [Person]), it does not delete Case on *fish* (much less value it), despite Agree.
  - **Problem:** What about the Case feature of *caught*? It can't delete under Match with Case on *fish* because *fish*'s Case feature isn't valued yet! Yet morphologically it will show the same case as *fish*.
  - **Idea!** It only looks like *caught* and *fish* agree in Case. Actually, each is having Case valued independently by T.
    - Step 1: T probes *there*, which is  $\phi$ -incomplete, leaving T unsatisfied.
    - Step 2: T probes *caught*, valuing its Case feature (nominative). But *caught* is  $\phi$ -incomplete (lacks [Person]), so T is still unsatisfied.
    - Step 3: T probes *fish*, valuing its Case feature (nominative). At last, T has found a  $\phi$ -complete element, and lives happily ever after.

<sup>3</sup> Norvin's joke.

**But wait a minute!** Didn't the  $\phi$ -features of *caught* disappear under Match with *fish*. Why is *caught* an acceptable Goal for the  $u\phi$ -features of T?

Answer:

(6) **deletion/erasure distinction**

Features get deleted (marked for deletion) but don't actually get *erased* until Spell-Out.

→ **A general alternative:** Frampton, Gutman, Legate, Yang -- an HPSG-like mechanism of unification ensures that whatever happens to the feature set of *caught* will affect the feature set of *fish*, and conversely.

### 4. Th/Ex Education<sup>4</sup>

- (7) *Puzzling word orders*
- \*There came several angry men into the room
  - There came into the room several angry men
  - \*There was placed a large book on the table
  - There was placed on the table a large book
  - There was a large book placed on the table
  - \*There entered a strange man the room
  - There entered the room a strange man

True in English, but the facts are the opposite in Icelandic, for instance...

[related facts discussed by (among others) Anagnostopoulou and Alexiadou]

- (8) a. Quand partira [<sub>vP</sub> ton ami ]?  
when will-leave your friend  
b.\*Quand mangera [<sub>vP</sub> Marie sa pomme]?  
when will-eat Marie her apple

--> **In a transitive construction, something must escape vP (by magic, if necessary).**

**"Thematicization/Extraction" (=Th/Ex)**

- has no effects on semantics (unlike Object Shift)  
--> "operation of the phonological component"  
(but one that crucially has effects on the narrow syntax:)

<sup>4</sup> My joke, not Norvin's.

"At the relevant stage of the cycle, the syntactic object  $\alpha$  so far constructed is transferred to the phonological component for application of Th/Ex. The narrow-syntactic computation then proceeds on course with  $\alpha$  unchanged except that the trace of Th/Ex is phonologically empty even prior to the strong phase level, at which point the position would have become phonologically empty even if not subject to Th/Ex."  
 [footnote: "Note that this amounts to highly limited access of narrow syntax to effects of the phonological component"]

**Th/Exed NPs can't wh-move, or be extracted from:**

- (9) a. \*How many packages did there arrive in the mail?  
 b. \*What did there arrive in the mail several packages of \_\_\_ ?

**Not a property of *there*-associate relations generally:**

- (10) a. How many packages are there in the room?  
 b. What are there [several packages of \_\_\_] in the room?

**But does hold for leftward Th/Ex as well as rightward:**

- (11) \*What are there [books about \_\_\_] being sold (in Boston these days)

**-->Th/Exed NP is inaccessible to Move**

**It is accessible to Agree (obeys Case Filter).**

- (12) a. Th/Ex is an operation of the phonological component  
 b. Traces are inaccessible to Move (but accessible to some other operations)

**Move=Agree + Pied-pipe + Merge.**

- PRO, pro can Merge
- traces can Agree (Th/Exed NP obeys Case Filter)  
 --> trace cannot Pied-Pipe (PRO, pro are heads)

- (13) a. a man [OP to talk to \_\_\_]  
 b. \*a man [[to OP] to talk \_\_\_]

- (14) *How ec's matter to narrow syntax*  
 a. Empty Categories disallow Pied-Piping  
 b. inactive trace disallows Match (A-traces don't block MLC--see above)

**So, output of Th/Ex can't participate in Move, but can Agree, etc.**

**Rightward Th/Ex doesn't iterate (Right Roof Constraint)**

**Neither does Leftward Th/Ex:**


- (15) \*There seems a man to be in the room

**5. Object Shift: "stopover" positions**

- Icelandic has Object Shift, English doesn't....

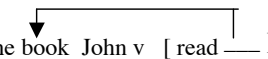
- (16) \*The Christmas Trolls ate the pudding not 

- ...unless (on various assumptions: phase impenetrability, Cyclicity, etc...) the object moves further:

- (17) What did the Christmas Trolls  not eat \_\_\_ ?

[other instances of stopover positions: French participle agreement...]

- Why does English behave this way? Consider an OS configuration for English:

- (18) [ T [ the book John v [ read \_\_\_ ] 

- *the book* should block Agree(T, *John*) (i.e. there should be a defective intervention constraint). In fact, in Icelandic, a shifted NOM object can even agree with T.

- ...assume Equidistance is *not* the way to go:

- (19) **Equidistance**  
 Terms of the edge of HP are equidistant from probe P

change to:

- (20) **Edge condition**  
 The phonological edge of HP is accessible to probe P

[way countercyclic, dude]<sup>5</sup>

- Move applies freely
- **MLC evaluated (representationally!) at strong phase level**

**So why isn't Icelandic English?**

- T can probe further in Icelandic?
- Icelandic has, in addition to OS, *DisI* ( $\approx$  Th/Ex in English)?

<sup>5</sup> Norvin's joke once again. Not my style.

**Evidence for *Dis*:**

- OSed pronoun in MSc can't bind anaphors (Holmberg and Platzack (1995))
- OSed pronouns are above v\*P, auxiliaries...
- Icelandic: Jon-DAT find-PL the computers-NOM not ugly-PL

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**6. Holmberg's Generalization (sort of)**

**A paradox of Icelandic object shift**

1. Object shift is only available when V has moved out of VP.
2. When object shift is available, its presence/absence is correlated with specificity/non-specificity. In particular, \*non-shifted specific and \*shifted nonspecific
3. When object shift is unavailable, an unshifted object is compatible with specific or non-specific interpretation.

**The motivating force of Chomsky's analysis of Icelandic**

- (21) a. The EPP position of v\*P is assigned specific interpretation INT'.  
b. But v\* receives an EPP feature only if that's the only way to assign INT' to some argument.

(21b) is meaningful because of (22):

- (22) **PARAMETER:** At the phonological border of v\*P, XP is assigned non-specific interpretation INT'.

[*phonological border* of HP = position not c-commanded by phonological material within HP]

**Icelandic: (22) holds**

==> Suppose  $\alpha$  is a direct object in a verb-initial VP, and the V does not move.  
 $\alpha$  may freely be specific or non-specific, since it is not at the phonological border of v\*P  
 Since OS is not necessary in order to achieve INT, OS is impossible by (21b).

==> Suppose  $\alpha$  is a direct object in a verb-initial VP, and the V *does* move.  
     If  $\alpha$  does not undergo OS, it receives INT'  
 and is non-specific (possibly conflicting with lexical properties, in the case of a definite DP or pronoun).  
     If  $\alpha$  does undergo OS, it will receive INT,  
 and will be specific. OS is possible, since assignment of EPP to v\* is the only way to achieve INT for  $\alpha$ , given V-movement and (22).

**English/French: (22) does not hold**

Since (22) does not hold, both INT and INT' are available for an unshifted direct object (even when V moves out of VP), so by (21b), v\* has no INT-related reason to be assigned an EPP feature. Therefore there is no OS, regardless of interpretation.

**OV languages**

???

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