

The Split Lexical Insertion Hypothesis

BRIAN AGBAYANI¹ and MASAO OCHI²
California State University, Fresno¹; Osaka University²

1 Introduction

Move F Hypothesis = Operations affect the relevant features and the relevant features only.
 (Chomsky 1995)

→ Category pied-piping is tied to the nature of PF: isolated features and other scattered parts of words are not subject to the rules of the phonological component.

- (1) a. Many men_i seem to each other [t_i to be in the room].
 b. *There seem to each other_i to be many men_i in the room. (Lasnik 1995)


Shift from **Move F** to Agree (Chomsky 2001): a probe with an uninterpretable (or unvalued) feature establishes a syntactic relation with a goal at a distance.


→ What Chomsky took to be evidence for Move F turns out simply to be inconclusive.
 We need to look into other domains of grammar to distinguish Move F and Agree.

We explore an aspect of the Move F hypothesis that is not shared by Agree:

→ If Move F is part of UG, then the computational system has a way of manipulating a lexical item LI by splitting it up, allowing subparts of LI to be scattered in the course of the derivation, unless PF considerations force them to be reunited. (see also Obata and Epstein 2011 for a proposal about feature splitting upon internal merge)

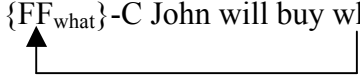
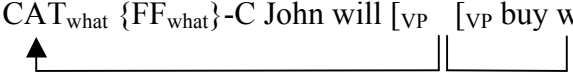
2. Feature splitting upon external/internal merge

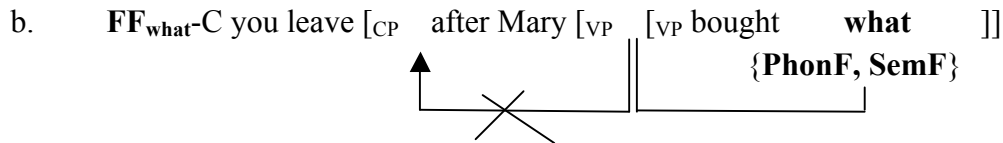
(2) $[_{CP} \ C \ [_{IP} \ \text{you bought } \mathbf{what}]]$ Chain= (FF, t)


(3) $[_{CP} \ \text{FF-C} \ [_{IP} \ \text{you bought } \mathbf{what}]]$ Chain= (CAT, t)


The category (CAT) must be adjacent to FF in order to remedy PF defectiveness (Agbayani 2000, 2006; Agbayani and Ochi 2006).

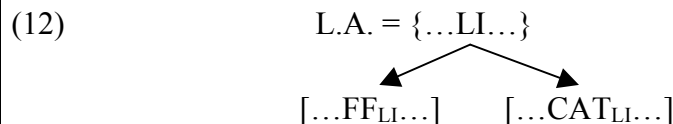
→ While (feature) attraction is driven by the inadequacy of the target, category pied-piping takes place to remedy its own inadequacy (i.e., Greed). (Agbayani 1998, Ochi 1999)

- (4) Shortest Movement Condition (SMC)
Make the shortest movement. (cf. Chomsky and Lasnik 1993)
- (5) Attract (Chomsky 1995, 297)
K attracts F if F is the closest feature that can enter into a checking relation with a sublabel of K.
- (6) (I wonder) what John will buy *t*.
- (7) a. $\{FF_{\text{what}}\}$ -C John will buy what (Attract F)

- b. CAT_{what} $\{FF_{\text{what}}\}$ -C John will [VP [VP buy what]] (Pied-Piping)

- (8) Attraction of the *wh*-feature takes place:
 a. before Spell-Out in English → FF attraction + CAT pied-piping
 b. after Spell-Out in Japanese → FF attraction only (Ochi 1999)
- (9) a. ??What did John wonder whether Mary bought *t*?
 b. ?? John-wa Mary-ga nani-o kata kadooka siritai no?
 John-TOP Mary-NOM what-ACC bought whether want-to-know Q
- (10) a. ?*What did John leave after Mary bought *t*?
 b. John-wa Mary-ga nani-o kata ato kaetta no?
 John-TOP Mary-NOM what-ACC bought after left Q



3. Split Lexical Insertion

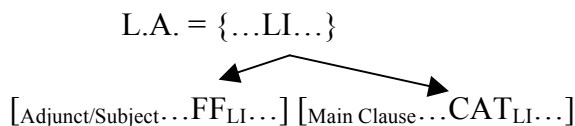
- i. Separation of FF and CAT can take place in the course of lexical insertion/External Merge.
- ii. When the derivation accesses a lexical item LI in the Lexical Array (L.A.), it manipulates LI so that FF and the rest of LI (CAT) are dissociated and merged into distinct syntactic positions in parallel.
- iii. Like movement, lexical insertion is a process involving dislocation of LI.



- iv. Both Internal and External Merge are subject to the strict cycle (Chomsky 2000).
- v. The theoretical possibility of Feature Splitting under External Merge makes interesting predictions for Parasitic Gap (PG) constructions.

PROPOSAL: PGs involve External Merge of FF of LI within the adjunct/subject and External Merge of CAT within the main clause in parallel.

(13) PG under the Split Lexical Insertion Hypothesis (SLIH)



- Constitutes a viable alternative to the sideward movement analysis of PG (Nunes 2001, 2004)
- SLIH may extend to the probe-goal relation generally, if we conceive of the *probe* as FF and *goal* as CAT, possibly deriving the EPP property.

4. PG Constructions

4.1. Split Lexical Insertion in PG

(14) What did you file *t* without reading *e*?

(Taraldsen 1981; Engdahl 1983; Chomsky 1982, 1986; Kayne 1983; Nissenbaum 2000; Culicover and Postal 2001; Hornstein 2001; Nunes 2001, 2004; among many others)

(15) Parallel derivation

reading FF_{what}

file Cat_{what}

(16) FF_{what}-C you file Cat_{what} [without reading (FF_{what})]

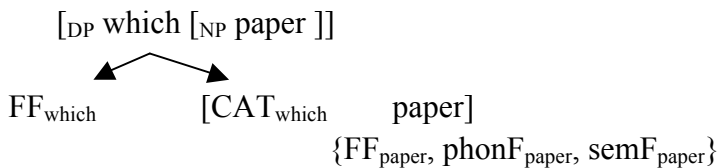


(17) Cat_{what} FF_{what}-C you [VP [VP file (Cat_{what}) [without reading (FF_{what})]]



How are Case/theta requirements satisfied if a DP is split up and merged into two positions?

(18) Which paper did you file *e* without reading *e*?

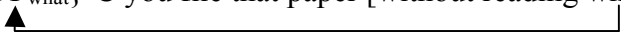



- FF of *paper* participates in Case/theta relations with the main verb *file*.
- (Corver (1992) and Bošković (2008) argue that UG allows NPs as well as DPs to function as arguments: FFs of nouns, like those of Ds, participate in ϕ -agreement relations; also, Takahashi and Hulsey (2009: 401) propose that both determiners and nouns, which constitute DPs, must receive Case.)

- (19) a. * $[_{DP} \text{ the } [_{CP} \text{ man}_i \text{ that it seems } t_i \text{ to be here}]]$
 b. $[_{DP} \text{ the } [_{CP} \text{ man}_i \text{ that } t_i \text{ seems to be here}]]$

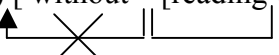
Note: To the extent that Kayne's (1994) promotion analysis is on the right track, it may support our conjecture that uFs of N may enter into an Agree relation.

- (20) *What did you file that paper [without reading t]?

- (21) a. $\{FF_{\text{what}}\}$ -C you file that paper [without reading what] (Attract F)

 b. $\{FF_{\text{what}}\}$ -C you file that paper [without [reading what]] (Pied-Piping)


'Reverse' PG is excluded by the analysis

- (22)
- $$\begin{array}{c} \text{L.A.} = \{ \dots \text{LI} \dots \} \\ \swarrow \quad \searrow \\ \text{[Adjunct} \dots \text{CAT}_{\text{LI}} \dots \text{]} \quad \text{[Main Clause} \dots \text{FF}_{\text{LI}} \dots \text{]} \end{array}$$

- (23) CAT $\{FF_{\text{what}}\}$ -C you file (FF_{what}) [without [reading CAT]]


4.2 Restrictions on the distribution of PGs

PG fails to occur in so-called anti-pronominal contexts (Cinque 1990; Postal 1994)

- (24) a. There are spiders/*them in the soup.
 b. What kind of spiders are there t in the soup?
 c. *What kind of spiders did he praise t before learning there were e in the soup?
- (25) a. Blake painted his house green/*it.
 b. What color did Blake paint his house t ?
 c. *What color did they criticize t after painting their house e ?

→ Antipronominal contexts are those positions that demand full-fledged material.
Weak pronouns do not qualify as “full fledged” in the sense that they arguably lack (most, if not all) semantic features, consisting only of formal features and phonological features.

PG cannot occur in the subject position of a finite clause.

(26) *the militant who he arrested *e* after learning *e* was carrying a gun

→ EPP does not reduce to formal feature checking but requires creation of a specifier (i.e., it requires pied-piping of CAT)

Cf. Pseudogapping:

(27) You might not believe me but you will Bob.

(28) [_{Agr-SP} you [_{TP} will [_{VP} V [_{Agr-OP} Bob₁ [_{VP} believe *t*_i]]]]] (Lasnik 2001)

(29) *You will Bob believe.

(30) You will believe Bob.

(31) a. Mary said she can't swim, even though she (really) can ~~*t*-swim~~.
b. *Mary said she can't swim, even though (really) can ~~she~~-swim.

We conclude with Lasnik (2001) that the EPP demands that the relevant subject position is occupied by a whole lexical item; the mere presence of formal features will not suffice.

4.3 S-Structure licensing

The main clause gap must be created in overt syntax.

(32) a. What did you file without reading?
b. *Who filed what without reading?

→ CAT of *what* is PF defective in (32b), and it has not remedied this PF defectiveness via overt movement; the word interpretation process operating at PF forces the main clause gap to be created in overt syntax.

4.4 Reconstruction asymmetry

PG and main clause gap exhibit a reconstruction asymmetry (Kearney 1983, Chomsky 1986)

- (33) a. [Which picture of himself_i] did John₁ burn *e* before Mary saw *e* ?
 b. *[Which picture of himself_i] did Mary burn *e* before John₁ saw *e* ?

- (34) a. saw FF_{which}
 b. CAT_{which} picture of himself

- (35) C John burn [CAT_{which} picture of himself] before Mary saw FF_{which}

- (36) a. FF_{which}-C John burn CAT_{which} picture of himself before Mary saw
 (FF_{which})
 b. [CAT_{which} picture of himself] FF_{which}-C John burn (CAT_{which} picture
 of himself) before Mary saw (FF_{which})

→ The anaphor is exclusively included in CAT, which is inserted into the main gap site.
 (Also confirms our claim that ‘Reverse’ PG is not allowed)

Note: binding and scope properties are sensitive to the integrity of the lexical items involved.

Topicalizing an anaphor does not license PG. (Postal 2001a, 224)

- (37) a. Himself₁, Mike₁ praised *t* after PRO describing himself₁ to Mary.
 b. *Himself₁, Mike₁ praised *t* after PRO describing **e*₁ to Mary.
 c. Mike₁ thinks that himself₁, Susan praised *t* after PRO describing *e*₁ to Mary.

- (38) Interpretive mechanisms target a lexical item ‘as a whole.’

- (39) a. Mike praised CAT_{himself} [after PRO describing FF_{himself} to Mary]
 b. FF_{himself}-C Mike praised CAT_{himself} [after PRO describing (FF_{himself}) ...]
 ↑
 c. CAT_{himself} FF_{himself}-C Mike [praised CAT_{himself}] [after PRO ... (FF_{himself}) ...]
 ↑

Scope mechanisms as well as anaphor binding are regulated by the condition in (38).

PG constructions suppress a pair-list reading (Hornstein 2001, 85)

- (40) a. What did everyone review? (single, pair-list)
 b. What did everyone review before I read? (single, *pair-list)

→ The pair-list reading is possible if the universal quantifier c-commands a clausemate *wh*-phrase at some point in the derivation. We sharpen this requirement, by demanding that the universal quantifier c-command a *wh*-phrase in its integral form. This requirement is met in (40a), but not in (40b).

The integrity of *what* is recovered only after the scattered features of this *wh*-phrase have gathered in the CP domain.

- (41) a. C everyone review CAT_{what} [before I read FF_{what}]
 b. FF_{what}-C everyone review CAT_{what} [before I read (FF_{what})]
 c. CAT_{what} FF_{what}-C everyone [review (CAT_{what})] [before I read (FF_{what})]
-

→ Interpretive mechanisms can only access elements that maintain their lexical integrity.

4.5 Derivational lexical integrity

- (42) *Derivational Lexical Integrity (First Approximation)*
 FF and CAT of a single LI must be inserted simultaneously (though not necessarily in the same position), without any operations applying between the insertion of FF and the insertion of CAT.

The main gap cannot c-command the PG (anti-c-command requirement; Engdahl 1983)

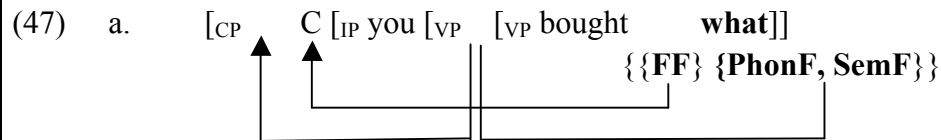
- (43) a. *Who *e* saw pictures of *e*?
 b. *Who *e* remembered talking to *e*?
 (44) *What *t* got filed *t* by John without him reading *e*?

- (45) a. ?Which house did John buy *t* without our having fixed up *e* ?
 b. *Which house was John sold *t* without our having fixed up *e* ? (Legate 1998)

(46) *Derivational Lexical Integrity*

CAT_{LI} is affected by an operation only at the derivational point at which FF_{LI} is affected.

In the case of Internal Merge, movement of FF (feature attraction) and that of CAT (generalized pied-piping) are two separate movements but are assumed to take place *simultaneously*.



→ External merge of FF and external merge of CAT also take place *simultaneously*.

5. Remarks on the sideward movement analysis of PG (Nunes 2001, 2004)

(48) Which paper did you file *t* without reading *e*?

(49) [without reading which paper]

- (50) a. [without reading which paper₁]
 b. [you file which paper₁]

(51) C you file [which paper]₁ without reading [which paper]₁

(52) which paper₁ did you file ~~which paper₁~~ without reading ~~which paper₁~~?

→ The sideward movement approach does not address why PG cannot occur in Anti-pronominal contexts or in the finite clause subject position.

Second, consider the “S-structure” licensing requirement on PG :

(53) *John filed every paper without reading *e*

(54) John filed every paper₁ [without reading every paper₁]

- (55) a. *Who read which paper before John read *e*?
 b. ?Who read which paper before John did?
 ‘who is the person *x* and which paper is *y* such that *x* read *y* before John read *y*?’

(56) Who read what before John did ~~read-what~~?

- (57) a. What did you file before John did?
 b. What did you file *e* before John ~~read-it~~?

(Kennedy 1997; cf. Kim and Lyle 1996, Postal 2001b)

(58) Who read what before John did ~~read-it~~?

Why is (55b) marginal?

Culicover (2000, 52): *wh*-elements in a multiple *wh*-question cannot serve as an antecedent of a pronoun.

(59) *Which parcel did you give to whom₁ without warning her₁? (Culicover’s judgment)

- (60) [context: Mary attempted to bother every boy in the class.]
 a. Which boy₁ did [Mary's attempt to bother *e*₁] bother *e*₁ most?
 b. ?Which boy₁ did [Mary's attempt to ~~bother-*e*₁~~] bother *e*₁ most?

- (61) a. *[Which girl who tried to meet *e*₁] could not meet who₁?
 b. *[Which girl who tried to ~~meet-*e*₁~~] could not meet who₁?
 c. *[Which girl who tried to meet him₁] could not meet who₁?

6. Conclusion

We proposed to extend the feature movement theory to External Merge.

→ Places PG under a general theory of movement and lexical insertion, which accounts for the major properties of the construction.

→ Under Feature Splitting, there is no need to appeal to sideward movement in the analysis of PG and ATB extractions (Nunes 2001, 2004).

→ Finally, we speculate that the Split Lexical Insertion Hypothesis (SLIH) may extend to the probe-goal relation generally, if we conceive of the probe as FF and goal as CAT, possibly deriving the EPP property.

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