

When the grammar doesn't mind which Merge it chooses

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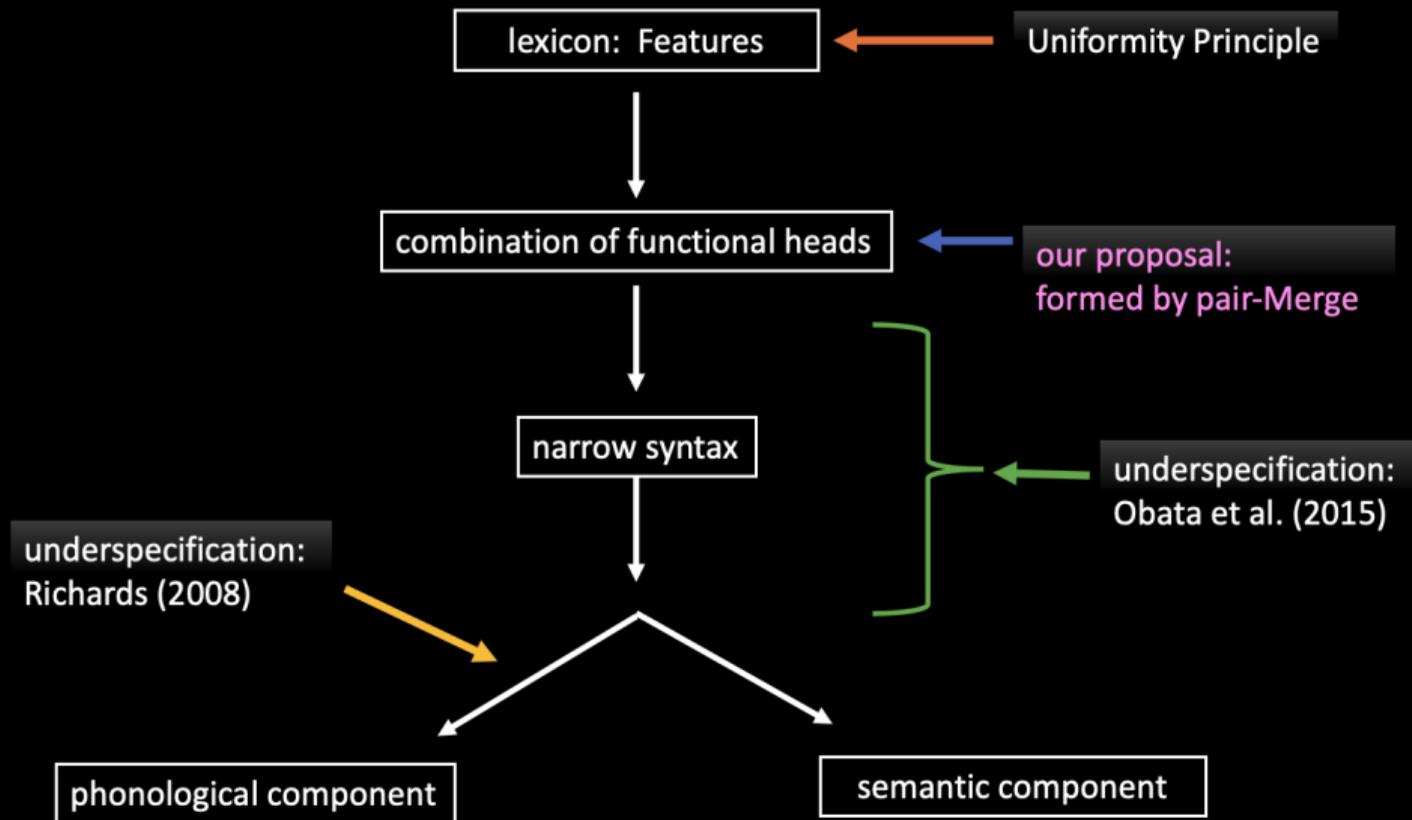
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Parametric Variation?

- Where does linguistic variation come from?
 1. Chomsky-Borer Conjuncture: The locus of the parametric variation might come from the inflectional feature. (cf. Baker 2008)
 2. Externalization: Linguistic variation comes from after narrow syntax (i.e., PF-component, cf. Berwick and Chomsky 2011, Chomsky 2013)
 3. No parameter (Richards 2008; Boeckx 2011; Boeckx 2014; Boeckx 2016; Obata, Epstein, and Baptista 2015; Epstein, Obata, and Seely 2018)
 - Rule ordering in narrow syntax (Obata, Epstein, and Baptista 2015; Epstein, Obata, and Seely 2018)
Agree-Move, Move-Agree order
(e.g., T-subject agreement vs. T-object agreement)
- This presentation: set-/pair-Merge of functional heads
i.e., Introducing functional heads by external set-Merge vs. external pair-Merge of functional heads before introducing it to narrow syntax

Minimalist View of Parametric variation?



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Modes of Merge

| | Internal | External |
|-------------------|-----------------------------------------------------------------|---------------------------------------------------------------------|
| Set-Merge | Internal Set-Merge(ISM) i.e., Move | External Set-Merge (ESM) |
| Pair-Merge | Internal Pair-Merge (IPM) i.e., head movement (Chomsky 2015) | External Pair-Merge (EPM) e.g, Epstein, Kitahara, and Seely 2016 |

Table 1: Modes of Merge

Proposal

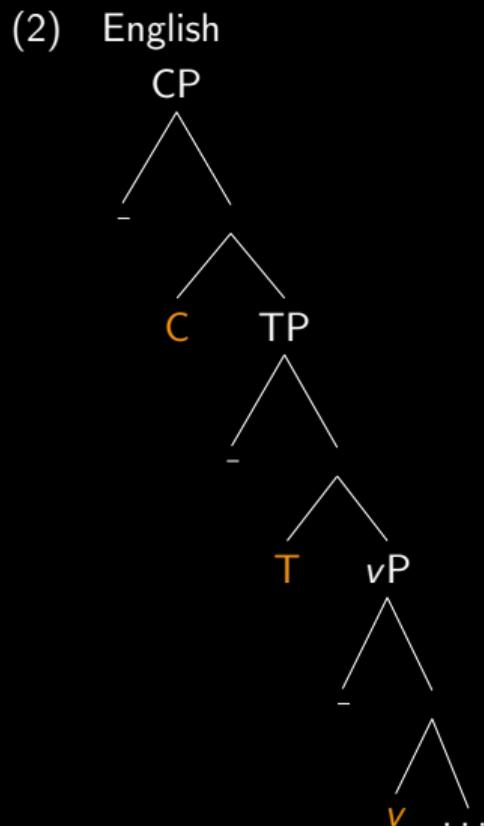
- **Our Proposal:** the clausal functional lexical items v , T and C can enter the clause in the different ways in (1) (abstracting away from linearization):

Bundling Conjecture

- (1) a. $[_{CP} C [_{TP} T [_{vP} v \dots]]]$ *the analytical type*
e.g. English
- b. $[_{CP} C [_{\langle v, T \rangle P} \langle v, T \rangle \dots]]$ *the mixed type*
e.g. German
- c. $[_{\langle v, T, C \rangle P} \langle v, T, C \rangle \dots]$ *the synthetic/agglutinative type*
e.g. Japanese

Proposed Structure for English-type

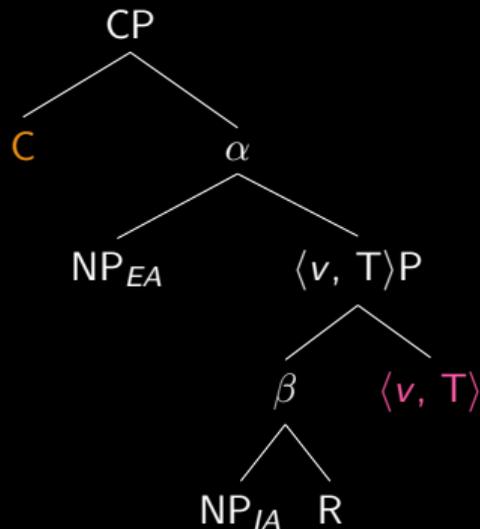
- Specifiers (i.e., [spec,CP], [spec, TP], [spec,vP]) are available.
- Movement to [spec,CP]
→ A'-movement/Q-agreement
- Movement to [spec,TP]
→ A-movement/ φ -agreement
- EM to [spec,vP]:
→ introducing External Argument



Motivation of proposed Structure of German-type

- Keine and Bhatt 2016: German has a syntactic verbal cluster, (*pace* Wurmbrand 2007; Salzmann 2013).
- In our terms, this verbal cluster is $\langle v, T \rangle$ (cf. Haider 1988; Bayer and Kornfilt 1994).

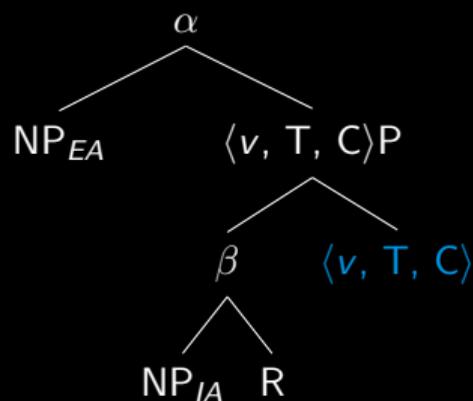
(3) German



Motivation of proposed Structure of Japanese-type

- Fukui 1988; Fukui 1995a; Fukui and Sakai 2003: Japanese has “defective” T- and C-heads that function only as place holders, e.g. for tense morphemes.
- Clauses in Japanese are **essentially VP-projections** (Fukui 1986; Fukui 1995b).
- In our term, $\langle v, T, C \rangle$ is a head of the clause
- v is “most prominent,” while maintaining that Japanese has T and C.

(4) Japanese



Contiguity

(5) a. Japanese

Bill-wa Mary-ga **ku-ru** (*tabun) **to** omotta.

Bill-TOP Mary-NOM **come-NONPAST** (*probably) **C** think

'Bill thinks Mary (probably) comes.'

[$\langle R, v, T, C \rangle \dots \langle R, v, T, C \rangle = ku-ru\ to$]

b. German

dass Cindy das Buch **gelesen** (*wahrscheinlich) **hat**

that Cindy the book **read** (*probably) **has**

'that Cindy (probably) read the book'

[$_{CP} C = dass$ [$\langle R, v, T \rangle_P \dots \langle R, v, T \rangle = gelesen\ hat$]]

c. English

Cindy **has** often **embraced** Mary.

[$_{TP} T = has$ [$\langle R, v \rangle_P \langle R, v \rangle = embraced \dots$]]

Parametric Clusters

| | Japanese | German | English |
|-----------------------------------------------------------------------|----------|------------------------------------------|---------|
| subject-verb agreement licensed by free-standing T and/or C | no | yes | yes |
| expletive requires a TP-projection | no | no | yes |
| VP-fronting | no | $\langle R, v, T \rangle$ P- fronting | yes |
| VP-ellipsis licensed by free-standing T | no | no | yes |
| WH-movement licensed by free-standing C | no | yes | yes |

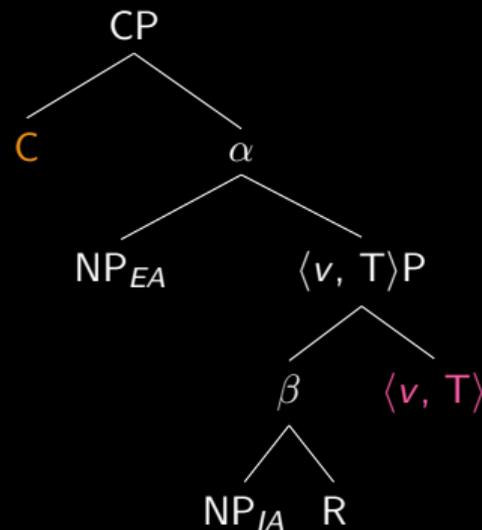
Table 2: Properties to capture

Explaining parametric clusters: A generalization

Patterns that are driven by our proposal

- A free-standing functional item (introduced by set-Merge):
 - there is a specifier; spec-head agreement is available.
- The functional item enters the derivation as part of an amalgam (introduced by external pair-Merge)
 - the specifier is reduced, and the spec-head relation becomes unavailable.

(6) German-type



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Subject-Verb Agreement: Our Prediction

- (7) a. [$_{CP}$ C [$_{TP}$ SU T $_{[\varphi]}$ [$_{VP}$ v ...]]] spec-head-type-agreement (T-SU) → English
b. [$_{CP}$ C $_{[\varphi]}$ [$_{\langle v, T \rangle P}$ SU ... $\langle v, T \rangle$]] probe-goal-type-agreement (C-SU) → German
c. [$_{\langle v, T, C \rangle P}$ SU ... $\langle v, T, C_{[\varphi]} \rangle$] no agreement → Japanese

1. English Type:

set-Merge of free-standing T: Initiates φ -agreement and subject-raising

2. German Type:

- T within the amalgam: Does not initiate φ -agreement, nor subject-raising
- set-Merge of free-standing C: Can initiate φ -agreement (cf. Obata 2010, Legate 2011, Goto 2011).

3. Japanese Type: C within the amalgam: Does not initiate φ -agreement

Subject-Verb Agreement

| | | Japanese | German | English |
|----|---|----------------------------------|------------------|-----------------|
| SG | 1 | Watashi-ga hashi-ru. | Ich renne. | I run. |
| | 2 | Anata-ga hashi-ru. | Du rennst. | You run. |
| | 3 | Kare-ga/kanojyo-ga hashi-ru. | Er/sie/es rennt. | He/she/it runs. |
| PL | 1 | Watashi tachi-ga hashi-ru. | Wir rennen. | We run. |
| | 2 | Anata tachi-ga hashi-ru. | Ihr rennt. | You run. |
| | 3 | Karera-ga/kanojyora-ga hashi-ru. | Sie rennen. | They run. |

Table 3: Subject Verb Agreement

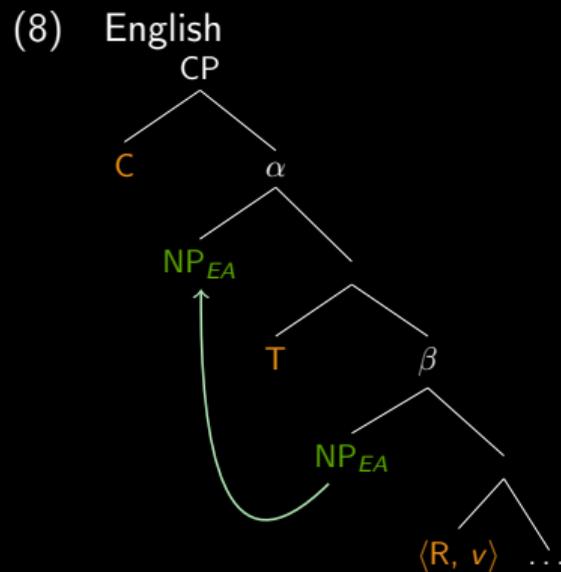
Labeling Issues?

Labeling Algorithm: (Chomsky 2013; Chomsky 2015)

1. H-XP \rightarrow H is a label
2. {XP, YP} \rightarrow ambiguous

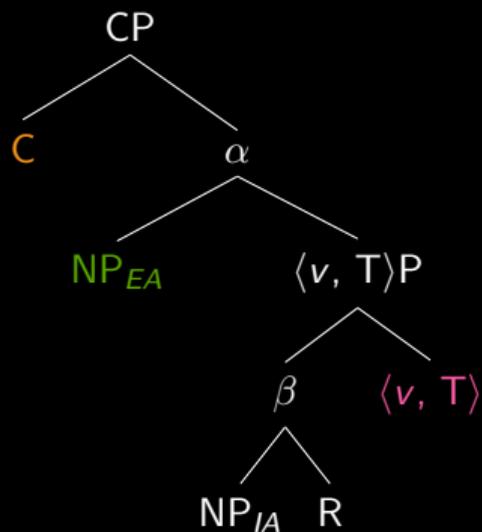
After subject-raising...

- α : $\langle \varphi, \varphi \rangle$
 - β : $\langle R, v \rangle$
- \rightarrow the amalgam becomes the label of β

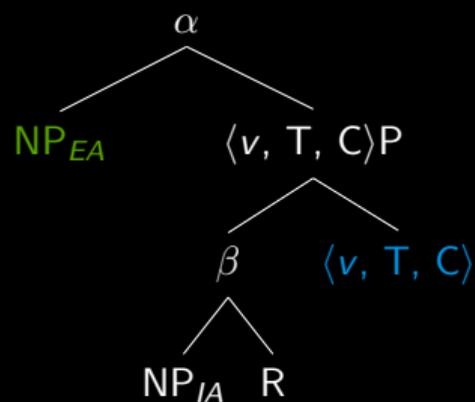


Labeling Issues?

(9) German



(10) Japanese



Our Prediction

If the TP-projection is absent due to pair-Merge, there is no way to insert expletives in [spec,TP].

- In contrast to English, Japanese and German do not feature structural expletives.

→ This falls out immediately from **the absence of a TP-projection**.

- (11)
- a. English
because there is a man in the garden
 - b. German
weil (*es) getanzt wird
because (*it) danced was

VP-fronting in Japanese

Our Prediction

If the vP/VP -projection is absent due to pair-Merge, there is no way to move this projection.

- Japanese: the clause head is $\langle v, T, C \rangle$.
- There is no VP-constituent, which explains why Japanese does not have VP-fronting (12), (Funakoshi 2020, pp. 118–119).

- (12) * $[_{VP}$ Ringo-o tabe] Taroo-ga t_{VP}
apple-ACC eat Taroo-NOM
(si-)ta.
(do-)PAST
lit. 'ate apple, Taroo did.'

VP-fronting in Japanese as FocP-fronting

- Japanese does allow VP-fronting (14) with the qualification in (13), cf. Funakoshi 2020, pp. 118–119:

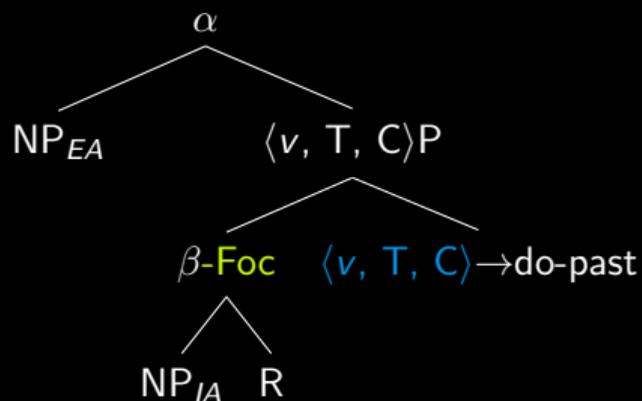
(13) Generalization on VP-Fronting in Japanese: (Funakoshi 2020: p. 119, (7))
VP-fronting is possible in Japanese only if *su*-insertion applies and a focus particle attaches to the verb in the fronted VP.

(14) [_{VP} Ringo-o tabe-sae/mo/wa/dake]
apple-ACC eat-even/also/TOP/only
Taroo-ga *t*_{VP} si-ta.
Taroo-NOM do-PAST

VP-fronting in Japanese as FocP-fronting

- When a **focus particle** attached to {NP, R}, the focus particle becomes a label of the structure.
- v is the dummy verb *su* – an independent word. v ceases to be an affix.
- $\langle v, T, C \rangle$ is then the dummy verb *su* plus tense (*si-ta* in 14):

(15)



Our Prediction

While the vP/VP -projection is absent due to pair-Merge, the amalgam phrase (e.g., $\langle v, T \rangle$) itself can be fronted (i.e., $\langle v, T \rangle P$ -fronting).

- German: absence of free-standing T : no EPP
- subjects can stay VP -internal (Wurmbrand 2006, p. 198)
- $\langle v, T \rangle P$ including the subject can move.
- T raises to C (in $V1/V2$ -clauses) at PF, following Zwart 2017.

- (16) [$_{\alpha}$ [*Subject* Ein junger Hund] einen
a-NOM young dog a-ACC
Briefträger gebissen] hat hier
mailman bitten has here
schon oft.
already often
'It has happened often here already that
a young dog has bitten a mailman.'

VP-Ellipsis

- Sag 1976, 19ff: the Aux-node preceding the elliptical VP must be overt.

Our Prediction

If **T** is free-standing, VP-ellipsis is allowed.

- English has free-standing **T** → VP-ellipsis is available.
 - German: No free-standing **T**, but $\langle v, T \rangle$.
- Therefore, German does not have VP-ellipsis (17) (López and Winkler 2000; Repp and Struckmeier 2020, p. 187).

(17) German

*Leyla WOLLte die Hausaufgaben
Leyla wanted the homework
nicht machen, doch Franz meinte,
not make but Franz meant
dass sie HAT.
that she has

'Leyla didn't want to do the homework
but Franz said that she has (done it).'

- Japanese: no independent VP-constituent + no free-standing T
- Our approach implicates that (18) is argument ellipsis (Sakamoto 2015; *pace* Funakoshi 2016):

(18) Hanako-wa gakkoo-ni it-ta kedo,
Hanako-TOP school-to go-PAST but
Taroo-wa ik-anak-atta.
Taroo-TOP go-NEG-PAST
(intended) 'Hanako went to the school, but
Taroo didn't go to the school.'

- The identification of a $\langle Q, Q \rangle$ -label (Cable 2010; Chomsky 2013) (19a).

Our Prediction

If **C** is free-standing, **wh**-movement is available.

- (19) a. [$\langle Q, Q \rangle$ [QP **WH**]_{*i*} [**C**_{*Q*} ... *t*_{*i*} ...]]
- b. English
I don't know **what**_{*i*} John bought *t*_{*i*}.
- c. German
Ich fragte mich **wen**_{*i*} Hans *t*_{*i*} sah.
I asked REFL who-ACC Hans saw
'I wondered who Hans saw.'
(Sabel 2000, 413, (12-b))

Wh-movement in Japanese

- Japanese: lack of obligatory *wh*-movement **due to the absence of a CP projection.**
- $C_Q = -ka$ is “hidden” (cf. Blümel and Goto 2020) in the amalgam $\langle v, T, C \rangle$.

(20) a. [$\langle v, T, C \rangle_P \dots WH \dots \langle v, T, C_Q = ka \rangle$]

b. Boku-ga John-ga **nani-o** katta ka
I-NOM John-NOM **what-ACC** bought Q
siranai (koto).
know-NEG-PRES (fact)

‘(the fact that) I don’t know what John bought.’

(Fukui 1988, 256, (12))

Summary: Parametric Clusters

| | Japanese | German | English |
|-----------------------------------------------------------------------|----------|------------------------------------------|---------|
| subject-verb agreement licensed by free-standing T and/or C | no | yes | yes |
| expletive requires a TP-projection | no | no | yes |
| VP-fronting | no | $\langle R, v, T \rangle$ P- fronting | yes |
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Table 4: Properties to capture

A clarification

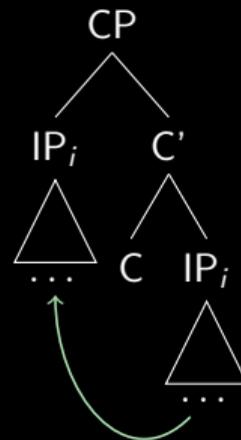
- Are the different rule orderings fixed in a given I-language?
 - No!
 - Obata and Epstein 2016: "**Intra** and **Inter** I-language variation"
 1. The variation displayed by different I-languages
 - English, German and Japanese in this presentation
 2. The variation displayed within a particular I-language. (Obata and Epstein 2016, p. 134)
 - Basque

A remark on Basque

A descriptive generalization (Ormazabal, Uriagereka, and Uribe-Etxebarria 1994)

- SOV(C)-languages tend to feature WH in-situ and Kayne's (1994) approach to it.
- According to Kayne's (1994) approach, the sentence-final C comes about by IP-raising:
- As [spec,CP] is occupied by IP, overt WH-movement is blocked.

(21) a. [_{CP} IP_i [_{C'} C t_i]]



A remark on Basque

- On the face of it, Basque is a counterexample:

- (22) a. ... Mirenek Joni liburua irakurri dio-**la** ... [S-IO-O-V+I+C]
... Mary-ERG John-DAT book-the-ABS read Aux-COMP ...
'...that Mary read the book to John'
- b. **Nori**_i irakurri dio Mirenek *t*_i liburua? [Wh_{IO}-V-S-O]
who-DAT read Aux Mary-ERG book-the-ABS
'Who did Mary read the book to?'
- c. *Mirenek **nori** liburua irakurri dio? *[S-WH_{IO}-O-V]
Mary-ERG **who**-DAT book-the-ABS read Aux?

A remark on Basque

- Ormazabal et al.'s solution:
 1. IP-movement (declaratives)
 2. WH-movement (interrogatives)

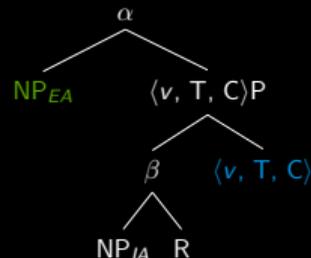
→ Perhaps, this alternation could be recast in our terms as EPM vs. ESM of Basque C:

(23) Our suggestion

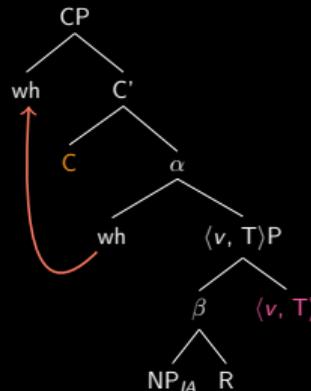
- a. declarative: $\{ \dots \langle v, T, C \rangle \}$
- b. interrogative: $\{ C, \{ \dots \langle v, T \rangle \} \}$

→ In (23b), $\langle v, T \rangle$ then perhaps undergoes head movement to free-standing C, to yield the surface serialization that we find (i.e., wh-V-S-O).

(24) Basque: Declarative



(25) Basque: Interrogative



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Typological Consideration

- These are possible derivations.
- Is linear order independent of “cluster formation” of functional heads by EPM?

| | C-initial | C-final |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A: {C, {T, {V, ...}}} | i) [_{CP} C [_{TP} T [_{VP} V ...]]] ii) [_{CP} C [_{TP} T [_{VP} ... V]]] iii) *[_{CP} C [_{TP} [_{VP} V ...] T]] iv) *[_{CP} C [_{TP} [_{VP} ... V] T]] | viii) *[_{CP} [_{TP} T [_{VP} V ...]] C] ix) *[_{CP} [_{TP} T [_{VP} ... V]] C] x) *[_{CP} [_{TP} [_{VP} ... V] T] C] xi) *[_{CP} [_{TP} [_{VP} V ...] T] C] |
| B: {C, {⟨V, T⟩ ...}} | v) ?[_{CP} C [_{⟨V,T⟩P} ⟨V, T⟩ ...]] vi) [_{CP} C [_{⟨V,T⟩} ... ⟨V, T⟩]] | xii) *[_{CP} [_{⟨V,T⟩} ... ⟨V, T⟩] C] xiii) *[_{CP} [_{⟨V,T⟩P} ⟨V, T⟩ ...] C] |
| C: {⟨V, T, C⟩ ...} | vii) ?[_{⟨V,T,C⟩P} ⟨V, T, C⟩ ...] | xiv) [_{⟨V,T,C⟩P} ... ⟨V, T, C⟩] |

Table 5: Linearization options (with syntactic structures)

Typological Consideration

| | C-initial | C-final |
|-----------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| A: {C, {T, {v, ...}}} | i) C > T > V > O ii) C > T > O > V iii) C > V > O > T iv) C > O > V > T | viii) T > V > O > C ix) T > O > V > C x) O > V > T > C xi) V > O > T > C |
| B: {C, {<v, T> ...}} | v) C > T > V > O vi) C > O > V > T | xii) O > V > T > C xiii) T > V > O > C |
| C: {<v, T, C> ...} | vii) C > T > V > O | xiv) O > V > T > C |

Table 6: Bare precedence relations corresponding to Table 5

→ Cluster formation of *v*, T and C by EPM might be either preferentially **head-final** or have more options and be more “liberal” when it comes to “flattening” hierarchical structure to temporal order than the “analytical” (ESMed) type.

Typological consideration

- What do these patterns tell us?
 - We are seeking parameter-free syntax since parameters cannot be a part of UG as primitives. We are trying to drive cluster effects of parameters.
 - Richards 2008, p. 145: "PF has to 'make do' with what the syntax gives it. That is, the mapping to PF is imperfect, which leaves it open to variation."
 - Roberts and Holmberg 2010, p. 41: **Generalisation of the input**
"If acquirers assign a marked value to H, they will assign the same value to all comparable heads."
 - Boeckx 2011, p. 217, (7): **Superset Bias**
Strive for parametric-value consistency among parameters (see also Pearl 2007; Yang 2007)
 - "if the child learns that V precedes its complement and T precedes its complement, she will be inclined to hypothesize that the next head she encounters will also precede its complement, and will only reject her hypothesis if she finds enough positive counterevidence." (Boeckx 2011, p. 217)

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Linguistic Variation: So, after all, where is it?

Three Factors in language development

1. Factor I: UG → features, Merge
2. Factor II: Experience
3. Factor III: The third factors (Chomsky 2005)

- Factor I → yields ‘microparameters’ (Richards 2008; Boeckx 2011)
- Factor III efficient computation; e.g., Shortest Move should not be parametrized. (cf. Boeckx 2011, p. 210)

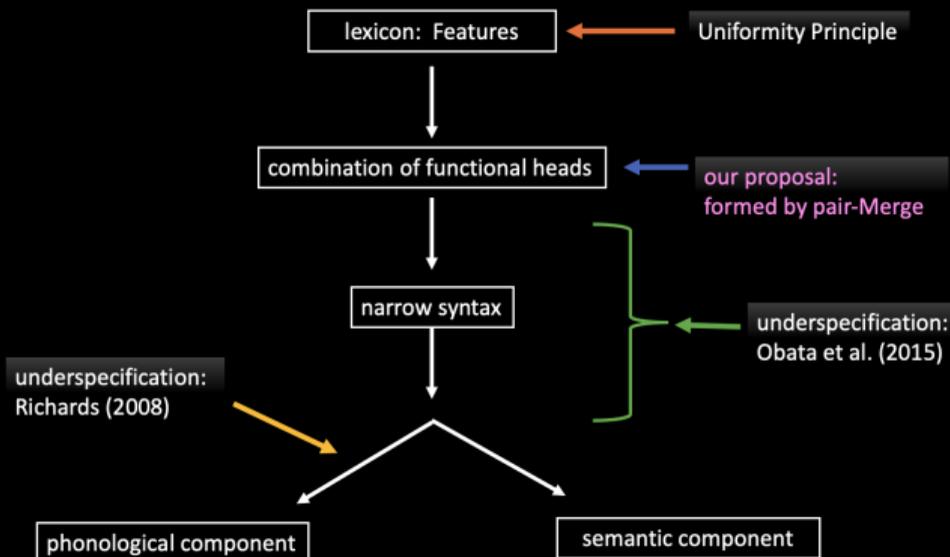
• Uniformity Principle

1. “In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances.” (Chomsky 2001, p. 2, (1))
 2. Strong Uniformity: “All languages share the same set of grammatical features, and every language overtly manifests these features.” (Miyagawa 2010, p. 12, (15))
- **Linearization/Externalization:** underspecification (Richards 2008) → the locus of ‘macroparameters’

Linguistic Variation: So, after all, where is it?

Underspecification of rule ordering

1. Obata, Epstein, and Baptista 2015:
 - Narrow syntax can yield multiple optimal derivations driven by efficient computation.
 - Rule ordering of Agree and Move
2. Obata and Epstein 2016; Epstein, Obata, and Seely 2018:
 - Intra/inter I-language variation
3. Our proposal:
 - The formation of functional heads



Conclusion

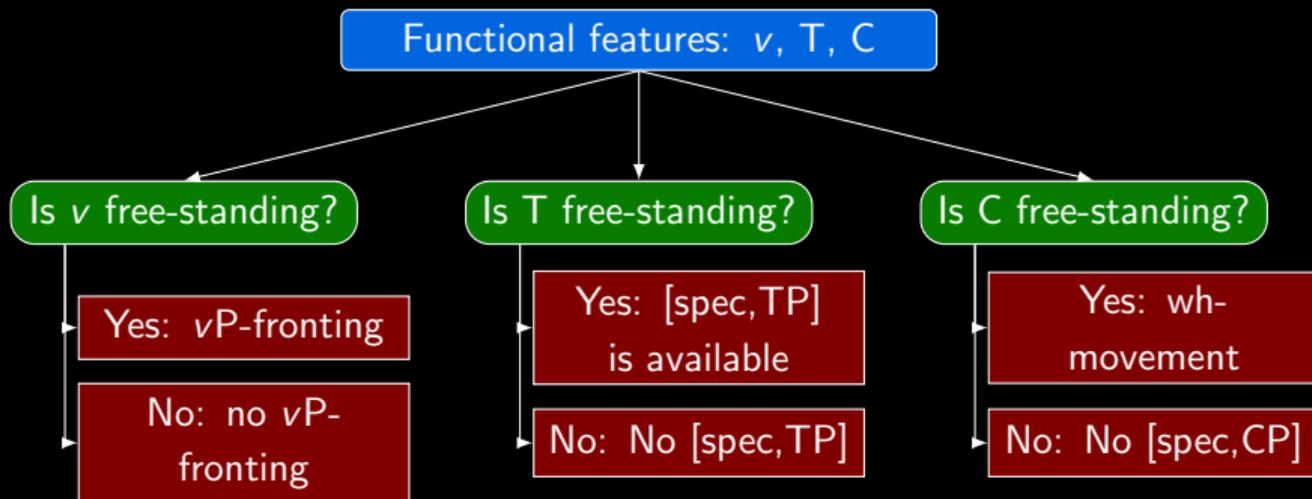
1. Obata, Epstein, and Baptista 2015 discuss the different rule ordering in narrow syntax, the timing of Agree (Agree-Move or Move-Agree).
2. Epstein, Obata, and Seely 2018 extends this idea to set-/pair-Merge rule ordering (when do set-/pair-Merge apply).
3. Based on this idea, we suggest that macro-parametric variation can be captured, comparing among English, German, and Japanese.

Bundling Conjecture

- (26) a. $[_{CP} C [_{TP} T [_{vP} v \dots]]]$ *the analytical type*
e.g. English
- b. $[_{CP} C [_{\langle v, T \rangle P} \langle v, T \rangle \dots]]$ *the mixed type*
e.g. German
- c. $[_{\langle v, T, C \rangle P} \langle v, T, C \rangle \dots]$ *the synthetic/agglutinative type*
e.g. Japanese

Conclusion

- We derived parametric clusters (i.e. macroparameters).



References i



Baker, Mark (2008). "The macroparameters in a microparametric world". In: *The Limits of Syntactic Variation*. Ed. by Theresa Biberauer. John Benjamins Publishing Company, pp. 351–373.



Bayer, Josef and Jaklin Kornfilt (1994). "Against scrambling as an instance of Move- α ". In: *Studies on scrambling*. Ed. by Norbert Corver and Henk van Riemsdijk. Berlin: Mouton de Gruyter, pp. 17–60.



Berwick, Robert and Noam Chomsky (2011). "The biolinguistic program: The current state of its development". In: *The Biolinguistic enterprise: New perspectives on the evolution and nature of the human language faculty*. Ed. by Anna-Maria Di Sciullo and Cedric Boeckx. Oxford University Press, pp. 19–41.



Blümel, Andreas and Nobu Goto (2020). "Head Hiding". In: *Proceedings of NELS*.



Boeckx, Cedric (2011). "Approaching parameters from below". In: *The Biolinguistic Enterprise: New Perspectives on the Evolution and Nature of the Human Language Faculty*. Ed. by Cedric Boeckx Boeckx and Anna-Maria Di Sciullo. Oxford University Press, pp. 205–221.



— (2014). *Elementary syntactic structures*. Cambridge: Cambridge University Press.



— (2016). "Considerations pertaining to the nature of logodiversity". In: *Rethinking Parameters*. Oxford University Press.



Cable, Seth (2010). "Against the Existence of Pied-Piping: Evidence from Tlingit". In: *Linguistic Inquiry* 41, pp. 563–594.

References ii

-  Chomsky, Noam (2001). "Derivation by Phase". In: *Ken Hale: A Life in Language*. Ed. by Michael Kenstovicz. Cambridge, MA: MIT Press.
-  — (2005). "On Phases". In: *Ms. MIT*.
-  — (2013). "Problems of Projection". In: *Lingua* 130, pp. 33–49.
-  — (2015). "Problems of Projection: Extensions". In: *Structures, strategies and beyond – studies in honour of Adriana Belletti*. Ed. by Elisa Di Domenico, Cornelia Hamann, and Simona Matteini. John Benjamins, pp. 3–16.
-  Epstein, Samuel, Hisatsugu T. Kitahara, and Daniel S. Seely (2016). "Phase-Cancellation by External Pair-Merge of Heads". In: *The Linguistic Review* 33.1, pp. 87–102.
-  Epstein, Samuel, Miki Obata, and Daniel S. Seely (2018). "Is linguistic variation entirely linguistic?" In: *Linguistic Analysis* 41.3-4, pp. 481–516.
-  Fukui, Naoki (1986). "A theory of category projection and its applications". PhD thesis. MIT.
-  — (1988). "Deriving the differences between English and Japanese: A case study in parametric syntax". In: *English Linguistics* 5, pp. 249–270.
-  — (1995a). "The principles-and-parameters approach: a comparative syntax of English and Japanese". In: *Approaches to language typology*. Oxford University Press.
-  — (1995b). *Theory of projection in syntax*. CSLI Publications.

References iii

-  Fukui, Naoki and Hiromu Sakai (2003). “The visibility guideline for functional categories: Verb raising in Japanese and related issues”. In: *Lingua* 113, pp. 321–375.
-  Funakoshi, Kenshi (2016). “Verb-stranding verb phrase ellipsis in Japanese”. In: *Journal of East Asian Linguistics* 25, pp. 113–142.
-  — (2020). “Verb-raising and VP-fronting in Japanese”. In: *The Linguistic Review* 37.1, pp. 117–146.
-  Haider, Hubert (1988). “Matching Projections”. In: *Constituent structure. Papers from the 1987 GLOW Conference*. Ed. by Anna Cardinaletti, Giulelmo Cinque, and Giuliana Gusti. Venedig, pp. 101–121.
-  Kayne, Richard S. (1994). *The Antisymmetry of Syntax*. M.I.T., Cambridge, Mass.
-  Keine, Stefan and Rajesh Bhatt (2016). “Interpreting verb clusters”. In: *Natural Language and Linguistic Theory* 34, pp. 1445–1492.
-  López, Luis and Susanne Winkler (2000). “Focus and topic in VP-anaphora constructions”. In: *Linguistics* 38.4, pp. 623–664.
-  Miyagawa, Shigeru (2010). *Why agree? Why move? Unifying agreement-based and discourse-configurational languages*. Cambridge, MA: MIT Press.
-  Obata, Miki and Samuel Epstein (2016). “Eliminating Parameters from the Narrow Syntax: Rule Ordering Variation by Third Factor Underspecification”. In: *Advances in Bilingualism: The Human Language Faculty and its Biological Basis*. Ed. by Koji Fujita and Cedric A. Boeckx. Routledge, pp. 128–138.

References iv

-  Obata, Miki, Samuel Epstein, and Marlyse Baptista (2015). “Can crosslinguistically variant grammars be formally identical? Third factor underspecification and the possible elimination of parameters of UG”. In: *Lingua* 156, pp. 1–16.
-  Ormazabal, Javier, Juan Uriagereka, and Myriam Uribe-Etxebarria (1994). “Word order and WH-movement: towards a parametric account”. Handout. GLOW 17, Vienna.
-  Pearl, Lisa Sue (2007). “Necessary bias in natural language learning”. PhD thesis. University of Maryland, College Park.
-  Repp, Sophie and Volker Struckmeier (2020). *Syntax – Eine Einführung*. J.B. Metzler.
-  Richards, Marc (2008). “Two kinds of variation in a minimalist system”. In: *Varieties of Competition*. Ed. by Fabian Heck, Gereon Müller, and Jochen Trommer. Linguistische Arbeitsberichte 87. Universität Leipzig, pp. 133–162.
-  Roberts, Ian and Anders Holmberg (2010). “Introduction”. In: *Parametric variation: null subjects in minimalist theory*. Cambridge University Press, pp. 1–57.
-  Sabel, Joachim (2000). “Partial Wh-Movement and the Typology of Wh-Questions”. In: *Wh-scope marking*. Ed. by Uli Lutz, Gereon Müller, and Arnim von Stechow. John Benjamins, pp. 409–446.
-  Sag, Ivan (1976). “Deletion and Logical Form”. PhD thesis. MIT.
-  Sakamoto, Yuta (2015). “Disjunction as a new diagnostic for (argument) ellipsis”. In: *Proceedings of NELS 45*. Ed. by Thuy Bui and Deniz Ozyildiz. Amherst, MA: GLSA, pp. 15–28.



Salzmann, Martin (2013). “Rule ordering in verb cluster formation. On the extraposition paradox and the placement of the infinitival particle *te/zu*”. In: *Rule Interaction in Grammar*. Ed. by Anke Assmann and Fabian Heck. Vol. 90. Linguistische Arbeitsberichte. University of Leipzig, pp. 65–121.



Wurmbrand, Susi (2006). “Licensing Case”. In: *Journal of Germanic Linguistics* 18.3, pp. 175–236.



— (2007). “How complex are complex predicates”. In: *Syntax* 10.243–288.



Yang, Charles (2007). “On productivity”. In: *Language variation yearbook* 5, pp. 333–370.



Zwart, Jan-Wouter (2017). “An argument against the syntactic nature of verb movement”. In: *Order and structure in syntax 1: Word order and syntactic structure*. Vol. 1. Open Generative Syntax. Berlin: Language Science Press, pp. 29–47.

Thank you!