

Labeling and Parametric Variation in Syntax^{*}

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0. Aim

(1) *Aim*

Chomsky (2015) proposes the strong/weak parameter on T regarding labeling to capture the parametric difference in EPP/ECP between non-null subject languages like English and null subject languages like Italian. This talk identifies potential flaws in the labeling theory and suggests a system that eliminates them. I propose a new way of labeling by the so-called independent head-like elements, such as ϕ on V (cf. Italian rich subject agreement morphology or Pashto rich object agreement morphology), an expletive (cf. English *there* and French *-il*), and a Q-particle (cf. Japanese *-ka*). As a consequence of this proposal, it is shown that the strong/weak parameter on T is eliminable and the spirit of Chomsky’s (2015) labeling analysis of EPP/ECP is maintained, with significant empirical advantages.

(2) Section 1: Chomsky (2015)

Section 2: Proposal and Analysis

Section 3: Consequence

Section 4: Conclusion

1. Chomsky (2015)

(3) *The strong/weak parameter on T and a universal property of V*

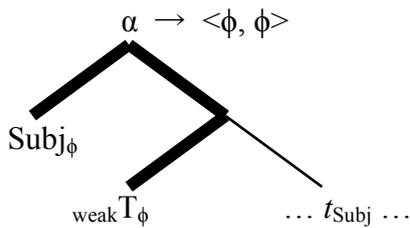
- a. T in a language with poor subject-verb agreement = “weak” (cf. English)
- b. T in a language with rich subject-verb agreement = “strong” (cf. Italian) (cf. Zushi 2005)
- c. Root \sqrt{V} with no category features = universally “weak” (all languages)

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- (4) *English*
- *[e] speaks.
 - *Who do you think that t_i will leave?

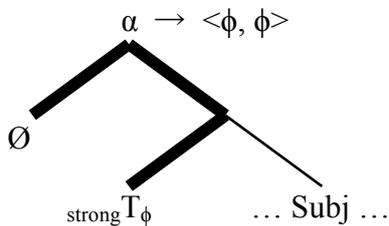
- (5) *Italian*
- [e] parla. ‘[e] speaks.’
 - Chi_i credi che t_i partirà? ‘Who do you think that t_i will leave?’

- (6) *Chomsky’s (2015) analysis of the subject in English-type languages*



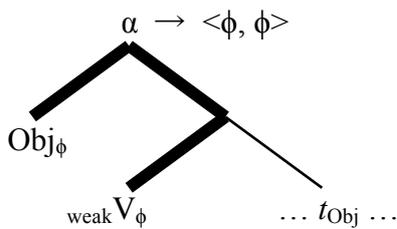
Since T in English is too “weak” to serve as a label, an overt subject DP with ϕ -features must be present in SPEC-T to determine the label of α as $\langle \phi, \phi \rangle$. Therefore, the examples like (4a) and (4b), which lack an overt subject in SPEC-T, are bad.

- (7) *Chomsky’s (2015) analysis of the subject in Italian-type languages*



Since T in Italian is “strong” enough to serve as a label, the $\langle \phi, \phi \rangle$ label of α can be determined by T alone. Thus, the examples like (5a) and (5b), which lack an overt subject in SPEC-T, are good.

- (8) *Chomsky’s (2015) analysis of objects in all languages*



Since V in all languages is too “weak” to serve as a label, an overt object must be present in SPEC-V to determine the label of α as $\langle \phi, \phi \rangle$. Thus, raising of the object must be obligatory.

• **Null object phenomena**

(9) *The prediction of Chomsky's (2015) analysis of (8)*

If V in all languages is universally too “weak” to serve as a label, then it follows that there are no languages that allow null objects, because an overt object must be present in SPEC-V to determine the label of α as $\langle \phi, \phi \rangle$ (see (8) above). However, this prediction is not borne out. Null objects are allowed in a language with rich object-verb agreement (cf. Pashto).

(10) *Pashto* (Huang 1984: 535-536)

- a. ma **mana** wə-xwar-a
I apple PRF-eat-3.F.SG.
‘I ate the apple.’
- b. ma [e] wə-xwar-a
I PRF-eat-3.F.SG.
‘I ate [e].’

(11) Thus, in Chomsky's (2015) system, it is not clear how to treat cases like (10b) (cf. also Welsh, Swahili, Georgian, Arabic, etc.).

• **Labeling of {EA, v*P}**

(12) *The consequence of Chomsky's (2015) analysis of (7)*

If Italian T alone can label the SPEC-TP construction due to its strength (see (7) above), then it is not necessary for the subject to raise to SPEC-T, allowed to stay in situ. The question is, then, how the predicate-internal subject construction, {EA, v*P}, is labeled in such a situation.

(13) *Belletti (2001, 2004)*

The subject remains in its original v*P-internal position in “subject inversion” structures.

(14) *Subject inversion structure*

Parla Gianni.
‘Gianni speaks.’

(15) Thus, in Chomsky's (2015) system, it is not clear how to treat cases like (14).

2. Proposal and Analysis

(16) Proposal

Non-phase heads (T, V) are universally “weak” in that they contain no category features.

(NB: The term “weak” here is nothing other than a cover term for the universal property of the nonphase heads. It just suggests that T and V are inherently unspecified as to category.)

(17) Chomsky’s (2015) system and the proposed system

	Chomsky (2015)	The proposed system
T in English-type languages	Weak	Weak
T in Italian-type languages	Strong	Weak
V in all languages	Weak	Weak

(18) The similarity and the difference between the two systems

- a. The proposed system takes over Chomsky’s labeling analysis for English-type languages.
- b. The proposed system eliminates the strong/weak parameter on T, supporting (19) and (20).

(19) The research agenda for the Minimalist Program (Chomsky 1998: 127)

“[the] optimal design [of the computational system of the language faculty] should eliminate such strange and difficult properties as strength”

(20) Uniformity Principle (Chomsky 2001: 2)

“In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances.

(21) A theoretical advantage of our system – a uniform characterization of (non-)phase heads

- a. Phase heads (C, v*) = the functional elements that are specified as to category.
- b. Non-phase heads (T, V) = the substantive elements that are unspecified as to category.

(See Goto 2016b for further consequences of this characterization)

• Analysis of null subjects

(22) Assumption about the parametric variation (Chomsky 2001: 2; see also Chomsky 2015: 9)

“**parametric variation** is restricted to the lexicon, and insofar as syntactic computation is concerned, to a narrow category of **morphological properties**, primarily **inflectional**.”

(23) *English and Italian conjugation, present indicate: 'speak / parlare'*

	<i>English</i>	<i>Italian</i>
[1, sg]	speak-Ø	parl-o
[2, sg]	speak-Ø	parl-i
[3, sg]	speak-s	parl-a
[1, pl]	speak-Ø	parl-iamo
[2, pl]	speak-Ø	parl-ate
[3, pl]	speak-Ø	parl-ano

(24) **Proposal**

V in rich agreement languages is decomposed into \sqrt{V} and overt ϕ -morphology, and the latter can behave just like its phrasal counterpart (i.e. ϕ -DP) when it enters the derivation.

(25) *Italian (= (5a))*

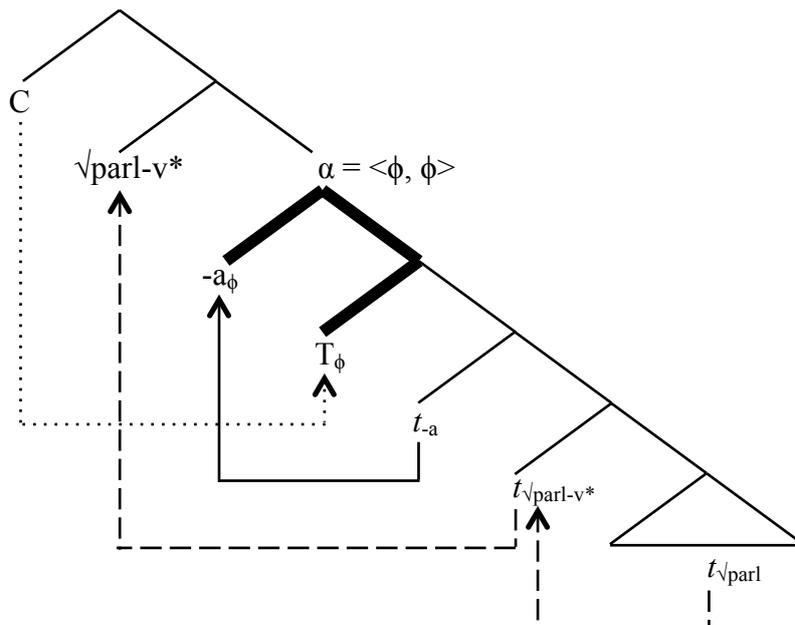
[e] parla.

'[e] speaks'

(26) *Decomposition of 'parla' under the proposal (24)*

parla = $\sqrt{\text{parl}}$ + $-a_\phi$

(27) *The proposed analysis of (25)*



(28) *The step-by-step derivation for (27)*

- a. Move of V ($\sqrt{\text{parl}}$) to v^* (“ --- ”) (cf. “root-categorization” in Chomsky 2015)
- b. Merge of v^* and ϕ -particle ($-\text{a}_\phi$) (cf. t_{-a})
- c. Merge of T and ‘ v^*P ’
- d. Move of ϕ -particle ($-\text{a}_\phi$) to SPEC-T (“ — ”)
(cf. “Head-to-SPEC movement hypothesis” in Fukui and Takano 1998, Toyoshima 2000)
- e. Move of V ($\sqrt{\text{parl}}$) to SPEC-T (“ - - - ”) (cf. “m-merger” in Matushansky 2006)
- f. Merge of C and T and ϕ -feature-inheritance from C to T (“ ”)
- g. Labeling of α by minimal search ($\alpha = \langle \phi, \phi \rangle$)

(29) In our analysis, therefore, overt ϕ -morphology on V plays a key role in analyzing null subjects in a language with rich subject-verb agreement (see Alexiadou & Anagnostopoulou 1998, Zushi 2003, among others, for the precursors of this analysis).

• **Analysis of null objects**

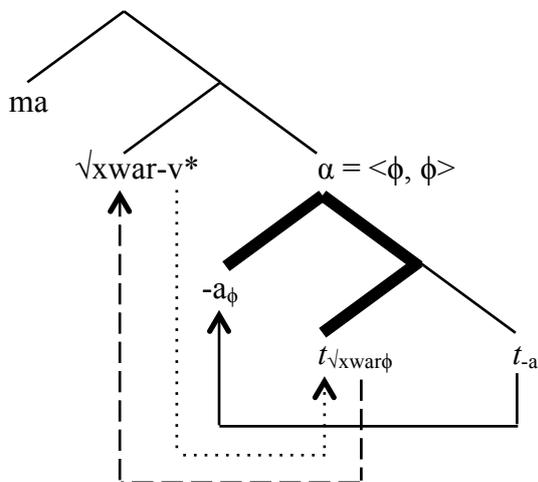
(30) *Pashto* (= (10b))

ma [e] wə-xwar-a
 I PRF-eat-3.F.SG.
 ‘I ate [e].’

(31) *Decomposition of ‘xwara’ under the proposal (24)*

xwara = $\sqrt{\text{xwar}}$ + $-\text{a}_\phi$

(32) *The proposed analysis of (30)*



(33) *The step-by-step derivation for (32)*

- a. Merge of V (\sqrt{xwar}) and ϕ -particle ($-a_\phi$)
- b. Move of ϕ -particle ($-a_\phi$) to SPEC-V
- c. Merge of v^* and ‘VP’
- d. Move of V (\sqrt{xwar}) to v^* (cf. “root-categorization”)
- e. ϕ -feature-inheritance from v^* to $t_{\sqrt{xwar}}$
- f. Labeling of α by minimal search ($\alpha = \langle \phi, \phi \rangle$)

• **Analysis of subject inversion**

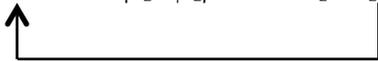
(34) *Italian (= (14))*

Parla Gianni.

‘Gianni speaks.’

(35) *The proposed analysis of (34)*

$[\alpha \sqrt{\text{partir-v}^* - a_\phi} [T_\phi [\beta \text{ Gianni } [t_{v^*} [t_{\sqrt{\text{partira}}}}]]]] (\alpha = \langle \phi, \phi \rangle)$



By raising the verbal complex ($\sqrt{\text{partir-v}^* - a_\phi}$) to SPEC-T, what is visible in β is *Gianni* alone, hence β is labeled D. NB: Belletti (2001, 2004): A postverbal subject is interpreted as new information focus.

• **Analysis of ECP in Italian and related constructions**

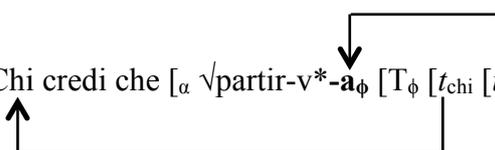
(36) *Italian (= (5b))*

Chi_i credi che t_i partira?

‘Who do you think that t_i will leave?’

(37) *The proposed analysis of (36)*

$[\text{Chi credi che } [\alpha \sqrt{\text{partir-v}^* - a_\phi} [T_\phi [t_{\text{chi}} [t_{-a} [t_{v^*} [t_{\sqrt{\text{partira}}}}]]]]]]]$



Since the $\langle \phi, \phi \rangle$ label of α is ensured by the presence of the ϕ -morphology $-a$ in SPEC-T, the *wh*-subject *chi* can move further (cf. Rizzi & Shlonsky’s 2007 “skipping strategies”).

(38) *The null expletive pro analysis of (36)* (Rizzi & Shlonsky 2007)

[Chi credi che [**pro** Subj partira t_{chi}]]

“expletive pro is instrumental in formally satisfying the Subject Criterion, hence in allowing the thematic subject to escape the effects of Criterion Freezing.” (Rizzi & Shlonsky 2007: 127)

(39) *No more null expletive* (Chomsky 2015: 9)

“What about EPP for Italian [...]? It has usually been assumed that EPP holds for these as well, with a **null pro expletive subject**. But **there is little reason for this assumption**, [...].

Dropping the assumption, we can conclude that Italian lacks EPP [...].”

(40) *Galician* (Fernández-Salguero 2008: 308)

Algúns nenos_i parece que t_i están tolos?

Some kids seems that are crazy

‘Some kids seem to be crazy’

(This construction is possible in null subject languages like Spanish, Italian, etc.)

(41) *The proposed analysis of (40)*

[Algúns nenos parece que [_{α} **están** _{ϕ} [T _{ϕ} [$t_{algúns\ nenos}$ [$t_{están}$ [t_{v^*} [$t_{están}$]]]]]]]]

Since the $\langle \phi, \phi \rangle$ label of α is ensured by the presence of *están* ‘are’ in SPEC-T, the subject *algúns nenos* ‘some kids’ can move further.¹

(42) Our labeling analysis of (36) can reconcile Chomsky (2015) with Rizzi & Shlonsky (2007).

(43) *English* (Rizzi and Shlonsky 2007: 126)

a. *What do you think that t_{what} is in the box?

b. What do you think that **there** t_{what} is in the box?

The same analysis can be extended to the following difference in the possibility of quirky subjects between English-type languages and Italian-type languages:

¹ (i) a. English: *To Gianni is always please music?

b. Italian: A Gianni è sempre piaciuta la musica?

To Gianni is always please music?

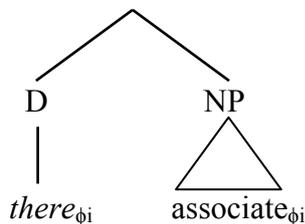
‘Gianni has always liked music.’ (Belletti & Rizzi 1988: 334)

In (ib), the $\langle \phi, \phi \rangle$ label of the SPEC-TP construction is ensured by the presence of *è* in SPEC-T, hence the quirky subject *a Gianni* is allowed.

(44) *Assumptions about English there-constructions* (Abe to appear, Goto to appear)

The expletive *there* and its associate make a constituent underlyingly, and the expletive shares ϕ -values of the associate.

(45) *The underlying structure*



(46) There is t_{there} a book on the table.

(47) *The proposed analysis of (43b)*

[What_i do you think that [_{α} **there** _{ϕ} [T _{ϕ} [[t_{there} t_{what}] [is in the box]]]]]

Since the $\langle \phi, \phi \rangle$ label of α is ensured by the presence of the expletive *there* in SPEC-T, the *wh*-subject *what* can move further.

(48) *French* (Rizzi and Shlonsky 2007: 136)

a. *Quelle étudiante_i crois-tu que t_i va partir?

‘Which student do you believe that is going to leave?’

b. Quelle étudiante_i crois-tu **qui** t_i va partir?

‘Which student do you believe QUI is going to leave?’

(49) *Assumptions about French qui and il*

a. qui = que + *-il* (expletive) (Taraldsen 2001)

b. French *il* inherently bears ϕ -values (3, sg) (Abe to appear)

(50) *The proposed analysis of (48b)*

[Quelle étudiante_i crois-tu qu [_{α} **-i** _{ϕ} [T _{ϕ} [$t_{quelle\ étudiante}$ [va partir]]]]]

Since the $\langle \phi, \phi \rangle$ label of α is ensured by the presence of the expletive *-i* in SPEC-T, the *wh*-subject *quelle étudiante* can move further.

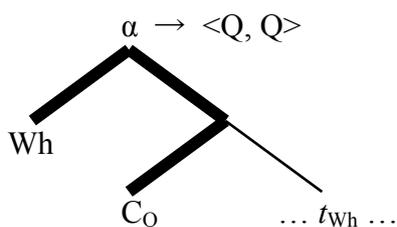
(51) Given the proposed system, Chomsky's (2015) labeling theory and Rizzi & Shlonsky's (2007) skipping strategies are unified.

3. Consequence

(52) *English: has wh-movement*

What_i did Mary buy *t*_i?

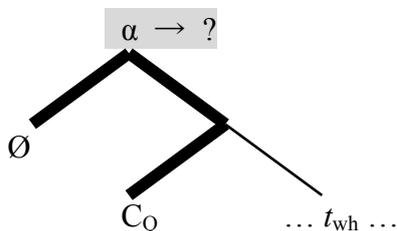
(53) *Chomsky's (2013, 2015) analysis of wh-movement*



In English, the SPEC-CP is labeled as <Q, Q> by raising the *wh*-phrase to SPEC-C.

(54) **What*_i do you wonder [_{alpha} *t*_i [C_Q [John likes *t*_i]]]?

(55) *Chomsky's (2013, 2015) analysis of (54)*



In English (54), since *what* raises from the criterial position, α loses the label of <Q, Q>, and thus the sentence is ruled out as a labeling failure in the embedded CP (see also Epstein, Kitahara and Seely 2015).

(56) *Q*. How can we derive the difference between *wh*-movement languages like English and *wh*-in-situ languages like Japanese under the labeling theory (cf. Fukui 1986, Kuroda 1988, Abe 2016, among many others)?

(57) *Japanese: no wh-movement*

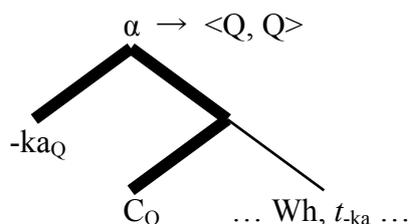
Hanako-ga nani-o kai-masi-ta ka.
 H.-Nom what-Acc buy-polite-past Q
 'What did Hanako buy?'

(58) *The proposed analysis of (57)*

Hanako-ga nani-o t_{-ka} kai-masi-ta **ka**.

In Japanese, the SPEC-CP is labeled as $\langle Q, Q \rangle$ by raising of the Q-particle *-ka* to SPEC-C from a *wh*-phrase.

(59) *The proposed analysis of non-wh-movement*



In Japanese, the SPEC-CP is labeled as $\langle Q, Q \rangle$ by raising the Q-particle *-ka* to SPEC-C.

(60) Thus, in our analysis, the parametric difference in *wh*-interrogatives is attributed to the very existence of the Q-head *-ka*: thanks to Merge of *-ka* to SPEC-C, the SPEC-CP is appropriately labeled, and a *wh*-phrase can stay in situ (see Cheng 1991, Hagstrom 1998, and Hasegawa 2005 for the precursors of this analysis).

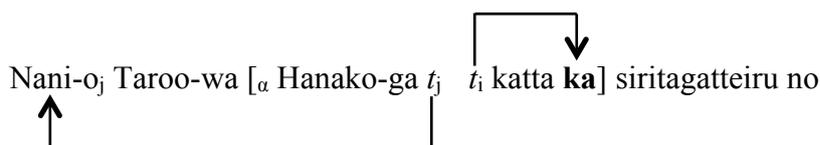
(61) *Prediction*

Our labeling analysis of *wh*-in-situ predicts that in Japanese, unlike English, raising of a *wh*-phrase from Wh Criterial position is allowed. This prediction is borne out.

(62) *No WH-Criterion in Japanese* (Takahashi 1993)

Nani-o_i Taroo-wa [_α Hanako-ga t_i katta ka] siritagatteiru no
 what-Acc T.-Top H.-Nom bought Q want-to-know Q
 ‘What does Taroo want to know whether Hanako bought?’

(63) *The proposed analysis of (62)*



In Japanese (62), since α stays labeled as $\langle Q, Q \rangle$ thanks to Merge of *-ka* to SPEC-C, further *wh*-movement of *nani-o* ‘what’ from the criterial position is allowed without inducing a labeling failure in the embedded CP.

4. Conclusion

(64) *The points*

- a. No parameter on T
- b. Decompositional approach to the verbal complex
- c. Uniform analysis of null subjects and null objects
- d. Labeling theory with skipping strategies
- e. Opens up a new possibility of explaining the difference between over *wh*-movement languages like English and *wh*-in-situ languages like Japanese

(65) *What is universal? And what takes parametric variations?*

- a. Labeling is universal (cf. $\langle \phi, \phi \rangle$ and $\langle Q, Q \rangle$)
- b. A parametric difference between a language X and a language Y is attributed to the difference of whether they have a morphologically overt element that contributes to labeling.

References

- Abe, J. 2016. Dynamic antisymmetry for labeling. *Lingua* 174: 1-15.
- Abe, J. to appear. How to probe expletives. *Studia Linguistica*.
- Alexiadou, A. & E. Anagnostopoulou. 1998. Parameterizing Agr: Word order, V-movement and EPP checking. *Natural Language and Linguistic Theory* 16: 491-539.
- Belletti, A. 2001. "Inversion" as focalization. In *Inversion in Romance and the theory of universal grammar*, ed. A. Hulk and J.-Y. Pollock, 60-90. Oxford: Oxford University Press.
- Belletti, A. 2004. Aspects of the low IP area. In *The structure of IP and CP: The cartography of syntactic structures*, vol. 2, ed. Luigi Rizzi, 16-52. New York: Oxford University Press.
- Belletti, A., Rizzi, L., 1988. Psych-verbs and theta theory. *Natural Language and Linguistic Theory* 6, 291–352.
- Cheng, L. 1991. On the typology of *wh*-questions. Ph.D. dissertation.
- Chomsky, N. 1998. Some observations on economy in generative grammar. In *Is Best Good Enough? Optimality and Competition in Syntax*, ed. by P. Barbosa et al, 115-127. Cambridge, MA.: MIT Press.
- Chomsky, N. 2001. Derivation by phase. In *Ken Hale: A Life in Language*, ed. by Michael Kenstowicz, 1-52. Cambridge, Mass.: MIT Press.
- Chomsky, N. 2013. Problems of projection. *Lingua* 130: 33-49.
- Chomsky, N. 2015. Problems of projection: Extensions. In *Structures, Strategies and Beyond – Studies in Honor of Adriana Belletti*, ed. by Elisa Di Domenico, Cornelia Hamann & Simona Matteini, 3-16. Amsterdam/Philadelphia: John Benjamins.
- Epstein, S. D., H. Kitahara, & D. Seely. 2015. *Explorations in maximizing syntactic minimization*. New York and London: Routledge.
- Fernández-Salgueiro, G. 2008. The Case-F valuation parameter in Romance. In *The limits of syntactic variation* (Linguistics Today 132), ed. by Theresa Biberauer, 295-310. Amsterdam: John Benjamins.
- Fukui, N., 1986. A theory of category projection and its applications. Doctoral dissertation, MIT, Cambridge, MA.
- Fukui, N., Takano, Y., 1998. Symmetry in syntax: merge and demerge. *Journal of East Asian Linguistics* 7, 27-86.
- Goto, N. 2016a. Eliminating strong/weak parameter on T. Ms. Toyo University. Available from <https://sites.google.com/site/gotounobu/>
- Goto, N. 2016b. A generalization of non-phase heads and a new rationale for feature inheritance: in pursuit of the universality of language. Paper presented at the 153rd LSJ Workshop held at Fukuoka University (December 4, 2016).

- Goto, N. to appear. How to label there-constructions. *English literature, regional branches combined issue*.
- Hagstrom, P. 1998. Decomposing Questions. Doctoral dissertation. MIT.
- Hasegawa, N. 2005. The EPP Materialized First, Agree Later: Wh-Questions, Subjects and Mo 'also'-Phrases. *Scientific Approaches to Language* 4: 33-88.
- Huang, C.-T. James. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15: 531-574.
- Kuroda, S.-Y., 1988. Whether we agree or not: a comparative syntax of English and Japanese. In: Papers from the Second International Workshop on Japanese Syntax. CSLI Publications, Stanford, pp. 103-143.
- Matshansky, O. 2006. Head movement in linguistic theory. *Linguistic Inquiry* 37: 69-109.
- Rizzi, L. and U. Shlonsky. 2007. Strategies of subject extraction. In *Interfaces + Recursion = Language? Chomsky's Minimalism and the View from Syntax-Semantics*, ed. H. M. Gärtner & U. Sauerland, 115-160. Berlin: Mouton de Gruyter.
- Takahashi, D. 1993. Movement of wh-phrases in Japanese. *Natural Language and Linguistic Theory* 11, 655-678.
- Taraldsen, K. T. 2001. Subject extraction, the distribution of expletives and stylistic inversion. In *Subject inversion in Romance and the theory of universal grammar*, ed. A. Hulk & J. -Y. Pollock, 163-182. New York: Oxford University Press.
- Toyoshima, T. 2001. Head-to-Spec movement. In *The Minimalist Parameter: Selected Papers from the Open Linguistics Forum, Ottawa, 12-23 March 1997*, ed. G. M. Alexandrova & O. Arnaudova, 115-136. Amsterdam: John Benjamins.
- Zushi, M. 2003. Null arguments: the case of Japanese and Romance. *Lingua* 113: 559-604.
- Zushi, M. 2005. Deriving the similarities between Japanese and Italian: a case study in comparative syntax. *Lingua* 115: 711-725.

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