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## Stress and Restrictiveness in Phrase and Compound

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### 1. INTRODUCTION

In this paper, I argue that the main stress location in phrases and compounds is determined by the restrictiveness of modifier or complement: restrictive modifier/complement receives the main stress while non-restrictive modifier/complement does not. In section 2, I briefly outline two ideas of generalizing stress rules for phrases and compounds, Non-Head Stress (Nespor and Vogel 1986, Duanmu 1990) and Bottom Stress (Cinque 1993). I point out a problem of these analyses in the case of noun phrases. In section 3, I propose an analysis in terms of restrictiveness of modifiers. Section 4 concludes the discussion.

### 2. GENERALIZING STRESS RULES

Chomsky and Halle (1968) propose Nuclear Stress Rule (NSR) and Compound Stress Rule (CSR) for phrases and compounds. Roughly speaking, NSR assigns stress to the second constituent in a two-membered constituent, and CSR assigns

stress to the first constituent. NSR and CSR correctly describe the main stress location in phrases and compounds such as (1a) and (1b), where the stressed constituent is underscored.

- (1) a. [<sub>NP</sub> black bird]  
b. [<sub>N</sub> blackbird]

The main stress is assigned to the second constituent *bird* in a phrase (1a) and to the first constituent *black* in a compound noun (1b). Although NSR and CSR are descriptively adequate, they do not give us any principled explanation of why phrases and compounds have different stress locations.

Some attempts to generalize stress assignment rules for phrases and compounds have been made in literature. A generalized rule, which I call Non-Head Stress, is that main stress falls on the non-head rather than on the head in a constituent (Nespor and Vogel 1986, Duanmu 1990), as shown in (2).

- (2) a. [<sub>N</sub> towel rack]  
b. [<sub>PP</sub> in Boston]  
c. [<sub>VP</sub> eat cake]

In compounds such as (2a), the second noun *rack* is the head of the compound noun while the first noun *towel* is the non-head (modifier or specifier). In phrases such as (2b) and (2c), preposition *in* and verb *eat* are heads while their complements *Boston* and *cake* are non-heads. Thus, the idea that stress falls on the non-head explains stress location in both phrases and compounds.

Another rule is proposed by Cinque (1993). He claims that stress is assigned to the most deeply embedded element in a

structure, which is in complement, i.e. non-head. I will call this rule Bottom Stress. Note that Cinque's theory is based on the X-bar theory of phrase structure, which allows non-branching structure. Cinque assumes that the non-head word (*towel*, *Boston*, *cake* in (2)) is projecting to make a phrase, as shown in (3).

- (3) a. [N [NP [N towel]]] [N rack]]  
 b. [PP [P in] [NP [N Boston]]]  
 c. [VP [V eat] [NP [N cake]]]

However, this kind of non-branching projection is not admitted in the minimalist framework (Chomsky 1995). It is necessary to solve this problem, known as First Merge problem, in some way. I will not discuss this problem in detail here. See Guimarães (2000), Kayne (2009), Fortuny (2008), Zwart (2004, 2011) and Tokizaki (2014, 2015).

Non-Head Stress and Bottom Stress can generalize phrasal stress and compound stress. However, these rules have an empirical problem in the case of a noun phrase consisting of a noun and its modifier, where the main stress falls on the head noun rather than on the non-head, as shown in (4).

- (4) [NP big cat]

Here, the main stress falls on the head noun *cat* and not on the non-head *big*. This is the contrary to the prediction of Non-Head Stress.<sup>1</sup> In order to solve this problem, Cinque (1993: 255) assumes that a noun phrase consisting of a modifier and a noun is in fact a projection of a functional head F, which takes NP as its complement, as shown in (5).

- (5) [FP big [F' F [NP cat]]]

In the structure (5), the modifier *big* is not the complement of the noun *cat* but the specifier of the functional head F. The most deeply embedded constituent in the whole FP is the head noun *cat*, which receives the main stress in the FP as Bottom Stress predicts.

Cinque's (1993) FP analysis of noun phrases successfully explains the stress location in phrases such as (4), which is different from that in compounds such as (1b) and (2a). However, Cinque (1993) does not discuss the nature of F in phrases. It is not clear when F appears in what kind of constructions. In the next section, I will argue that F is in fact a Nominal head taking non-restrictive modifier as its specifier to make a Nominal Phrase, which corresponds to FP in (5).

### 3. RESTRICTIVENESS OF MODIFIERS

I try to solve the problems of Bottom Stress in terms of the restrictiveness of modifier and complement. Prenominal adjectives can be divided into two types, non-restrictive adjectives and restrictive adjectives, which have different stress patterns, as shown in (6) (Givón 1993: 268, cf. Jespersen 1924: Ch. 8, Chomsky 1965: 217, Bolinger 1967, Larson and Marušič 2004, Cinque 2010: 7).<sup>2</sup>

- (6) a. The industrious Chinese came to California in the late 1800s.  
 b. The industrious Chinese made it, the other Chinese didn't.

The adjective *industrious* in (6a) is non-restrictive and that in (6b) is restrictive: the former modifies the whole set of

Chinese people while the latter restricts the set to a specific subcategory of Chinese people. Then, these sentences can be paraphrased as (7a) and (7b) with a non-restrictive and restrictive relative clause.

- (7) a. The Chinese, who are industrious, came to California in the late 1800s.  
 b. The Chinese who are industrious made it, the other Chinese didn't.

I assume that the subject and the relative clause in (7) have the structure shown in (8).<sup>3</sup>

- (8) a. The [<sub>NP</sub> Chinese], [<sub>CP</sub> who are industrious], came to California in the late 1800s.  
 b. The [<sub>NP</sub> Chinese [<sub>CP</sub> who are industrious]] made it, the other Chinese didn't.

In (8a) non-restrictive relative clause is not dominated by the NP containing *Chinese*. In (8b) restrictive relative clause is complement (or adjunct) of *Chinese*, which is N (or N' in X-bar theoretic structure). Assuming the parallelism between relative clauses and prenominal modifiers, I argue that the category of *industrious Chinese* with non-restrictive meaning (6a) is a nominal phrase (NomP) containing a modifier and an NP, while that with restrictive meaning (6b) is an NP. I assume that Nom is a functional head taking modifier as its specifier and NP as its complement. Then, the structures of non-restrictive (6a) and restrictive (6b) are (9a) and (9b).

- (9) a. The [<sub>NomP</sub> industrious Nom [<sub>NP</sub> Chinese]] came to California in the late 1800s.

- b. The [<sub>NP</sub> industrious Chinese] made it, the other Chinese didn't.

The modifier *industrious* is in NP with *Chinese* in restrictive (9b) but not in non-restrictive (9a). The stress on *Chinese* in non-restrictive (9a) corresponds to the unmarked stress location in noun phrases such as *big cat* in (4). Then, Bottom Stress correctly assigns stress to the most deeply embedded element *Chinese* in (9a). The stress on *industrious* in restrictive (9b) corresponds to the stress in compounds such as *towel rack* in (2a). In other words, a modifier in a compound is restrictive by nature.<sup>4</sup> For example, the modifier *towel* restricts the set of *rack* into a specific type of racks in (2a). Similarly, *black* restricts the set of *birds* into a species of birds in (1b).<sup>5</sup>

The question to be answered is why stress is assigned to restrictive modifier rather than head noun, because restrictive modifier and head noun seem to be at the same depth in structures such as (1b), (2a) and (6b), repeated here as (10a), (10b) and (10c).

- (10)a. [<sub>N</sub> blackbird]  
 b. [<sub>N</sub> towel rack]  
 c. The [<sub>NP</sub> industrious Chinese] made it, the other Chinese didn't.

Here I argue that restrictive modifier invokes alternative modifiers in hearers' mind. For example, in (10c) *industrious* invokes alternative modifiers, which is expressed as *other* in the second clause. Rooth (1985) proposes a theory of focus in which focus invokes alternatives. I assume that a restrictive modifier has alternative

modifiers as its complement.

- (11)a. [<sub>N</sub> [black-(not humming, ...)]-bird]
- b. [<sub>N</sub> [towel (not magazine, ...)] rack]
- c. The [<sub>NP</sub> [industrious (not lazy, ...)] Chinese] made it, the other Chinese didn't.

In these structures, a restrictive modifier, which makes a constituent with alternative modifiers, is more deeply embedded than the head noun. Thus, we can keep the generalized stress assignment rule, which assigns stress to the most deeply embedded element in a structure.

So far, I have argued that main stress falls on restrictive modifier rather than head in noun phrases and compounds. This idea can be called Restrictive Stress. Finally, I would like to consider the possibility of extending Restrictive Stress to the stress placement in other constituents than NP and compounds. For example, in a PP *in Boston* (2b), the complement *Boston* restricts the meaning of the preposition *in*: the intended location is restricted to the city. Similarly, in a VP *eat cake* in (2c), the complement *cake* restricts the action *eat* into a specific type of eating. If this extension of Restrictive Stress is on the right track, we can derive Non-Head Stress and Bottom Stress from Restrictive Stress. In the cases of non-restrictive modifier modifying head noun, stress falls on head noun rather than non-restrictive modifier because the head noun itself restricts the set (e.g. *my dear little Ann* (Jespersen 1924, Ch. 4)). Thus, Restrictive Stress shows interesting correlation between syntax, phonology and semantics.

#### 4. CONCLUSION

We have seen that NSR and CSR can be generalized into Non-Head Stress or Bottom Stress. I pointed out that Non-Head Stress and Bottom Stress have problems of head stress in adjective-noun pairs. I have argued that we can solve the problems of generalized stress rules in terms of restrictiveness of modifiers. Stress falls on the restrictive modifier, which is in the same NP with the head and is branching because of implicit alternative modifiers. Stress does not fall on non-restrictive modifiers, which are the specifier of Nominal Phrase (NomP) dominating the NP containing the head noun at the bottom of the whole structure. Then, we can keep generalized stress rules that apply to all types of phrases and compounds. Finally, I suggest the possibility of deriving the generalized stress rules from Restrictive Stress.

Restrictiveness may allow us to explain problematic cases of stress location in some compounds (cf. Giegerich 2004). I hope that this study sheds light on the study of interface between syntax, phonology and semantics of grammar.

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#### NOTES

<sup>1</sup> The stress on the head noun in noun phrases consisting of a modifier and a noun is a problem for Non-Head Stress. If we assume the structure in (5), one could argue that *cat* is a non-head (i.e. complement of F). However, *cat* is a head in NP. The problem still remains as to why the head in NP can receive stress.

<sup>2</sup> Postnominal modifiers are unambiguously interpreted as restrictive in English (Cinque 2010: 7).

(i) Every word unsuitable was deleted.

Postnominal modifiers can be paraphrased as restrictive relative clause.

(ii) Every word that was unsuitable was deleted.

The fact that postnominal modifiers receive stress shows the restrictiveness of stressed modifiers. Citing Giorgi and Longobardi (1991: 123), Cinque (2010: 7) points out that Romance languages such as Italian have the contrary interpretations to English: prenominal adjectives in Italian are unambiguously nonrestrictive while postnominal ones are ambiguous between a restrictive and non-restrictive interpretation.

(iii) *Le noiose lezioni di Ferri se le*

the boring classes of Ferri  
*ricordano tutti.* (unambiguous)

remember all

‘Everybody remembers Ferri’s classes,  
all of which were boring.’  
(non-restrictive)

(iv) *Le lezioni noiose di Ferri se le*  
the classes boring of Ferri  
*ricordano tutti.* (ambiguous)  
remember all

‘Everybody remembers Ferri’s classes,  
all of which were boring.’

(non-restrictive)

or

‘Everybody remembers just those  
classes by Ferri that were boring.’

(restrictive)

This typological contrast also shows the connection between stress location and restrictiveness: Romance languages have righthand stress while Germanic languages have lefthand stress in words and compounds. However, I will not go into detail here. See Tokizaki (2013) for the typology of stress location.

<sup>3</sup> The structure of noun and relative clause has been controversial. Here, I will not discuss whether the head noun makes a constituent with a non-restrictive relative clause or not. See Emonds (1979), Ushie (1980), McCawley (1988) and Kono (2012).

<sup>4</sup> Givón (1993: 268) claims that “[n]on-restrictive modifiers in a sense enter into a compound relation with their head noun. That is, they create a unitary concept, thus potentially a new lexical item.” I think that the word “non-restrictive” is misused for “restrictive” here.

<sup>5</sup> Here I simply argue that modifiers can restrict the set into a specific subset. For example, a *blackboard* may refer to a large board with a dark green surface, but the modifier *black* still restricts the set of boards into the boards for specific purpose. I will

not discuss the matter of idiomatic meaning or the semantic non-compositionality of compounds. See Partee (1995) for compounds and compositionality.

#### REFERENCES

- Bolinger, Dwight (1967) "Adjectives in English: Attribution and Predication," *Lingua* 18, 1-34.
- Chomsky, Noam (1965) *Aspects of The Theory of Syntax*, MIT Press, Cambridge, MA.
- Chomsky, Noam and Morris Halle (1968) *The Sound Pattern of English*, Harper & Row, New York.
- Cinque, Guglielmo (1993) "A Null Theory of Phrase and Compound Stress," *Linguistic Inquiry* 24, 239-298.
- Cinque, Guglielmo (2010) *The Syntax of Adjectives*, MIT Press, Cambridge, MA.
- Duanmu, San (1990) *A Formal Study of Syllable, Tone, Stress and Domain in Chinese Languages*, Doctoral dissertation, MIT.
- Emonds, Joseph (1979) "Appositive Relatives Have No Properties," *Linguistic Inquiry* 10, 211-243.
- Fortuny, Jordi (2008) *The Emergence of Order in Syntax*, John Benjamins, Amsterdam.
- Giegerich, Heinz J. (2004) "Compound or Phrase? English Noun-plus-Noun Constructions and the Stress Criterion," *English Language and Linguistics* 8, 1-24.
- Giorgi, Alessandra and Giuseppe Longobardi (1991) *The Syntax of Noun Phrases*, Cambridge University Press, Cambridge.
- Givón, Talmy (1993) *English Grammar: a Function-based Introduction, vol. 1*. John Benjamins, Amsterdam.
- Guimarães, Maximiliano (2000) "In Defense of Vacuous Projections in Bare Phrase Structure," *University of Maryland Working Papers in Linguistics*, vol. 9, 90-115.
- Jespersen, Otto (1924) *The Philosophy of Grammar*, George Allen & Unwin, London.
- Kayne, Richard S. (2009) "Antisymmetry and the Lexicon," *Linguistic Variation Yearbook* 8, 1-31.
- Kono, Tsuguyo (2012) *Eigo-no Kankeisetsu (Relative Clauses in English)*, Kaitakusha, Tokyo.
- Larson, Richard K. and Franc Marušič (2004) "On Indefinite Pronoun Structures with APs: Reply to Kishimoto," *Linguistic Inquiry* 35, 268-287.
- McCawley, James D. (1988) *The Syntactic Phenomena of English*, University of Chicago Press, Chicago.
- Nespor, Marina and Irene Vogel (1986) *Prosodic Phonology*, Foris, Dordrecht.
- Partee, Barbara H. (1995) "Lexical semantics and compositionality," *Language (An Invitation to Cognitive Science, vol. 1)* (2nd ed.), ed. by Lila R. Gleitman and Mark Liberman, 311-360, MIT Press, Cambridge, MA.
- Rooth, Mats (1985) *Association with Focus*, Doctoral dissertation, University of Massachusetts.
- Tokizaki, Hisao (2013) "Deriving the Compounding Parameter from

Phonology,” *Linguistic Analysis* 38, 275-303.

Tokizaki, Hisao (2014) “Antisymmetry and Obligatory Contour Principle,” paper presented at GLOW Asia X, National Tsing Hua University, Taiwan.

Tokizaki, Hisao (2015) “Hitsui-genri-to Seisei-Tougoron (Obligatory Contour Principle and Generative Syntax),” to appear in *Kagaku Kenkyuhi Seika Houkokusho, Hitusi-genri-no Shatei-to Koryoku-ni kansuru Kenkyu*, ed. by Masao Okazaki, Ibaraki University.

Ushie, Kazuhiro (1980) “Remarks on Nonrestrictive Relatives in English,” *Studies in English Linguistics* 8, 53-84, Asahi Press, Tokyo.

Zwart, Jan-Wouter (2004) “Unary Merge,” handout for Tilburg University Grammaticamodellen Staff Seminar. <<http://odur.let.rug.nl/~zwart/docs/ho04tilb.pdf>>

Zwart, Jan-Wouter (2011) “Structure and Order: Asymmetric Merge,” *Oxford Handbook of Linguistic Minimalism*, ed. by Cedric Boeckx, 96-118, Oxford University Press, Oxford.



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