

On the Left Branch Extraction of Adjectives in East Asian Languages

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1 Introduction

In some languages (e.g. Russian), the L(ef) B(ranch) E(xtraction) phenomenon is quite common; in others (e.g. English), LBE is disallowed.¹

- (1) a. **Miluju_i** ty uvidel [_{DP}*t_i* devočka]. (Russian)
cute you saw cat
'You saw a cute cat.' (Bondarenko 2021:3)
- b. ***Cute_i** you saw [_{DP} *t_i* cat]. (English)

Uriagereka (1988:113) observes that there is a relationship between lack of articles and possibility of LBE. For example, Bulgarian and Macedonian, which are the only two Slavic languages with overt determiners, happen to disallow LBE (Bošković 2004).

¹I use *Pinyin* for Mandarin, *Kunreishiki* for Japanese and Yale Romanization for Korean in transcription. The abbreviations are as follows: ACC=accusative, DEC=declarative, EXPL=expletive, GEN=genitive, LOC=locative, NOM=nominative, PST=past tense, REL=relativizer, RET=retrospective. ; means preceding in the linear order.

- (2) ***Kakva**_i prodade Petko [_{DP*t*_i} kola]? (Bulgarian/Macedonian)
 what.kind sold Petko car
 'What kind of a car did Petko sell?'

However, in some languages that do not have overt determiners, LBE is often disallowed. Such languages include Mandarin, Japanese and Korean (MJK). Sentences in (3) are all intended to mean "You saw the/a cute cat.", where extractions of *cute* all result in ungrammaticality. Whilst Japanese and Korean allow a restricted number of LBEs, i.e. extraction of genitive-marked PPs shown in (4a-b), the Mandarin counterpart (4c) is still ungrammatical.²

- (3) a. ***Kěài-de**_i nǐ kànjiàn-le [_{DP*t*_i} māo]. (M)
 cute-DE you see-PERF cat
 b. ***Kawaii**_i anata-ga [_{DP*t*_i} neko]-o mi-ta. (J)
 cute you-NOM cat -ACC see-PST
 c. ***Kwuyye-un**_i ney-ka [_{DP*t*_i} koyangi]-lul pwa-ss-ta. (K)
 cute-REL you-NOM cat -ACC see-PST-DEC
- (4) a. [**Dare-kara-no**]_i Taro-ga [_{DP*t*_i} tegami]-o sute-ta-no? (J)
 who-from-GEN Taro-NOM letter -ACC discard-PST-Q
 'From whom, Taro discarded a letter?'
 (Takahashi and Funakoshi 2013)
- b. ?***[Sewul-eyse-uy]**_i na-nun [_{DP*t*_i} salm]-i cwoh-ta. (K)
 Seoul-LOC-GEN I-TOP life -NOM like-DEC
 'I like the life in Seoul.'
 (Song 2022, p.c.)
- c. ***[Zài shénme guójiā de]**_i nǐ xǐhuān *t*_i shēnghuó? (M)
 LOC what country DE you like life
 Intended: 'In what country, you like the life (there)?'

It is thus clear that the lack of overt articles may be only a necessary but insufficient condition for whether one can have LBE or not. There must be other factors that restrict LBE. The fact that Japanese and Korean can have LBE of genitive-marker PPs but cannot have adjectival LBE(4a-b) further indicates that different types of LBE have different restricting factors. In this paper, I focus on the impossibility of adjectival LBE in MJK as exemplified in (3a-c). I argue that the theory of C(yclic) L(inearization) (Fox and Pesetsky 2005; Ko 2014) combined with a matching R(elative) C(ause) analysis for MJK adjectives provides a good explanation for the ban on the LBE of adjectives.

² This Korean sentence (4b) received divided judgments. Out of the four native Korean speakers I consulted in person, half rejected the sentence. Two anonymous reviews also said the sentence was not good.

2 A Brief Overview of Cyclic Linearization

The main claim of CL is as follows.

- (5) **Information about linearisation, once established at the end of a given Spell-out domain, is never deleted in the course of derivation.**
(Fox and Pesetsky 2005:6)

CL is very different from the Phase Impenetrability Condition (PIC) proposed by Chomsky (2000). The PIC stipulates that after the spell-out of a phase, all the constituents will be frozen forever in this phase save for its edge. Therefore, under the PIC, a constituent has to first move to the escape hatch of its mother phase in order to be extracted in later stages of the derivation. In contrast, under CL, constituents can move out of a phase freely after its spell-out. What matters is that each spell-out establishes a linearization of all the elements it contains and sends it to P(honological) F(orm). The order of these spell-out syntactic elements should be preserved once and for all, and order contradiction will cause crash at PF. Illustrations adapted from Ko's (2014:11) are shown below in (6).

- (6) a. $[_{\alpha P} X Y [_{\alpha'} \alpha Z]]$:
 $X_i Y_j \alpha_i Z$ (Original Order at αP)
- b. $[_{\gamma P} X [_{\gamma'} \gamma [_{\beta P} t_X Y [_{\beta'} \beta [_{\alpha P} t_X t_Y [_{\alpha'} \alpha Z]]]]]]$:
 $X_i Y_j$ at $\alpha P, \beta P$ & γP (Order Preserved → Good)
- c* $[_{\gamma P} Y [_{\gamma'} \gamma [_{\beta P} X [_{\beta'} \beta [_{\alpha P} t_X t_Y [_{\alpha'} \alpha Z]]]]]]$:
 $X_i Y_j$ at αP & βP ; $*Y_j X_i$ at γP (Order Contradicted → Bad)

3 Prenominal Adjectives in MJK

There is ample evidence showing prenominal adjectives in MJK start out in RCs.³ I will start with Mandarin adjectives first, and then move on to the Korean and Japanese cases.

Cinque (2010) proposes that there are two sources for adnominal adjectives cross-linguistically, direct modification and indirect modification. Sproat and Shih (1988), among others, argue that Mandarin overtly distinguishes direct modification from indirect modification, and that adjectives

³ For Mandarin, it is adjectives with *-de* that start out in RCs.

with the *-de* ending start out in reduced RCs and predicate of nouns indirectly. A superficial piece of evidence is that *-de* is also used for connecting relative clauses and nouns. Upon that, Sproat and Shih observe that for adjectives without *-de*, there is a particular order for them to appear before a noun, but that for those with *-de*, such a restriction is lifted. This is shown in (7).

- (7) a. ^{OK}hǎo yuán pánzi V.S. *yuán hǎo pánzi
good round plate *round good plate
b. ^{OK}hǎo-de yuán-de pánzi V.S. ^{OK}yuán-de hǎo-de pánzi
good-DE round-DE plate round-DE good-DE place
(Sproat and Shih 1987:466)

Additionally, it is possible only for *de*-adjectives to be preceded by temporal adverbs such as *céng* as shown in (8). That is, there is an available T head in the structure where *de*-adjectives are generated.

- (8) měi(-de) rén V.S. **céng** měi*(-de) rén
beautiful(-DE) person **before** beautiful*(-DE) person
'beautiful person' V.S. 'previously-beautiful person'

For *de*-less adjectives, I assume that they are head-adjoined to N, following Sproat & Shih (1987). This automatically explains why adjectives without *de* tend to have a strict order before a noun. Shih (1986) also provided a piece of strong evidence that a *de*-less adjective and a noun form a compound: an A-N structure can be expanded into [A₂ [A₁-N]] by adding a contrary phrasal modifier. Consider the examples in (9). In both sentences, two contradictory adjectives A₁ and A₂ can co-occur when the structure is [A₂-*de* A₁ N] but not [A₂-*de* A₁-*de* N].

- (9) a. huī-de bái(*-de) zhǐ
grey-DE white(*-DE) paper
'greyish white-paper' (Shih 1986:143)
b. téngtòng-de wútòng(*-de) rénlíu
painful-DE painless(*-DE) abortion
'painful painless-abortion'

Now let's turn to Korean. Kim (2002) points out Korean adjectives modifying nouns show a high similarity with relative clauses as a relativizer is needed, as in (10a). Second, the order of prenominal adjectives does not matter, as in (10b). Also, prenominal adjectives can be tensed, as in (10c).

- (10) a. alumtaw-**un** kkoch
 beautiful-REL flower
 '(the/a) beautiful flower'
- b.^{OK} haya-n cek-un kkoch V.S.^{OK} cek-un haya-n kkoch
 white-REL small-REL flower small-REL white-REL flower
- c. alumtaw-**ess-te-n** kkoch
 beautiful-PST-RET-REL flower
 '(the/a) previously-beautiful flower'

As to Japanese, though there exist many differences, we still see evidence showing adjectives participate in indirect modification.⁴ The relative order of prenominal adjectives are free, shown in (11a), and they can be tensed also, shown in (11b).

- (11) a.^{OK} marui akai e V.S. ^{OK} akai marui e
 round red picture red round picture
 (Sproat and Shih 1987:479)
- b. utukushi-**katta** hana
 beautiful-PST
 '(the/a) previously-beautiful flower'

So far, we have seen that there is ample evidence that suggests adjectives in MJK start out in RCs. RCs are generally considered to be strong islands that prevent any element from moving outside of them, so it might already seem clear at this point as to why adjectives in MJK can not be extracted. However, the islandhood of RCs might not be universal as some Scandinavian languages do allow extraction from RCs, as shown in (12).⁵

- (12) [Dat språket]_i finns det många islänningar [_{RC} som talar *t_i*].
 the language exist EXPL many Icelanders REL speaker
 'There are many Icelanders who speak that language'
 (Swedish, Lindahl 2014)

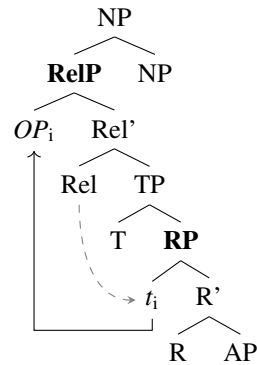
Therefore, I argue for an explanation without recourse to the *a priori* knowledge of the strong-islandhood analysis for RCs. I adopt the matching

⁴ One significant difference is that there is no need for relativizer for a prenominal adjective. But since Japanese verbs in a relative clause can directly precede nouns, the absence of a relativizer does not suggest that they do not start out in relative clauses.

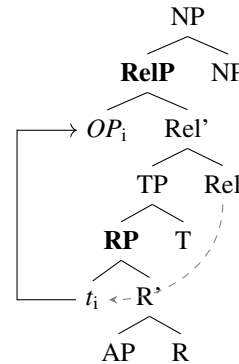
⁵ As will be shown below, if the Swedish sentence (12) involves a true extraction out of the RC, the RC structure in Swedish must be different from that in MJK.

analysis for RCs, following Ham & Kim (2004). The postulated structures for prenominal adjectives MJK are given in (13). A relative clause projects the RelP, wherein the AP is predicated of *OP*—a silent copy of the head noun—by means of the RP (Relator Phrase) as defined by Den Dikken (2006). The Rel head probes down to *OP* merged in Spec,RP and raises it to Spec,RelP.

(13) a. Mandarin



b. Japanese/Korean



4 CL's Restriction on Adjectival LBE in MJK

This section illustrates how the theory of CL can nicely explain the ban on adjectival LBE in MJK. Consider the Mandarin example (3a), repeated below in (14). Three steps in the derivation of this ill-formed sentence are given in (15).

(14) ***Kěài-de**_i nì kànjiàn-le [_{DP}*t*_i mǎo].
 cute-DE you see-PERF cat
 'You saw the/a cute cat.'

(15) a. [_{RP}*CAT* [_{R'}R [_{AP}*cute*]]]:

*CAT*_i**R**_i*cute*

b. [_{NP} [_{RelP}*CAT*_j [_{Rel'}Rel [_{TP}T [_{RP}*t*_j [_{R'}R [_{AP}*cute*]]]]]] [_{NP}*cat*]]]:

*CAT*_i**Rel**_i**T**_i**R**_i*cute*_j*cat*

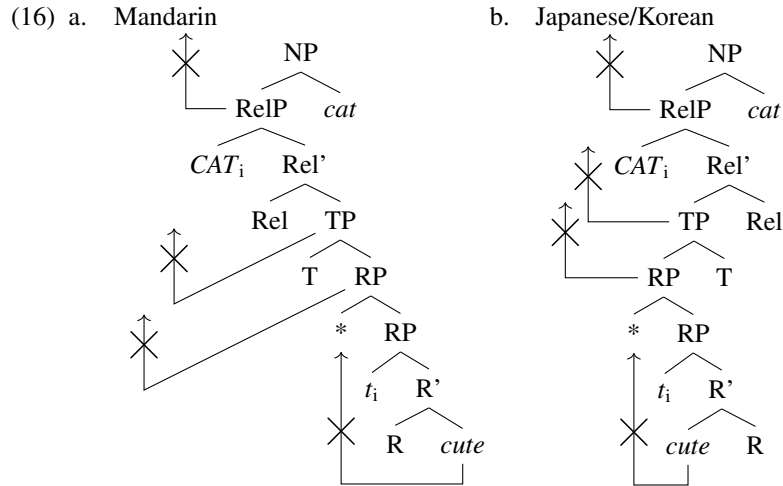
c. [_{XP} [_{AP}*cute*]_i [_{TP}*you* [_{VP}*see* [_{NP}*CAT* Rel T R *t*_i *cat*]]]]]:

*cute*_i*you*_j*CAT*_i**Rel**_i**T**_i**R**_i*you*_j*see*_j*cat*

Severe order contradictions arise here, which are banned by CL. If *cute* follows *CAT* (the operator i.e. the silent copy of the head noun) at the spell out of the RP as in (15a), *cute* should always follow *CAT* in the later course of derivation. At the spell-out of NP in (15b), we have *cat* following *CAT*, Rel, T and R. However, if *cute* undergoes LBE and get final word order (15c),

we end up having *cute* preceding *CAT*, Rel, T and R, which contradicts the previously established linearization.

Though one could argue that the AP first moves to the edge of the RP and to the edge of the RelP, this is impossible because it violates antilocality (Abels 2003, among others) whereby it is too uneconomical for a head to raise its complement unto its own specifier (Ko 2015). Also, RP movement or TP movement cannot happen under CL either since otherwise it will still violate the relative order between *CAT* and *cute*. The RelP cannot move either because we need *CAT* to be C-commanded by the head noun. An illustration is given below in (16a).



As Korean and Japanese are very similar at this point, let's only consider Korean. Three steps in the derivation of the ungrammatical Korean sentence (17) are given in (18). We again find order contradictions. Though the head-finality of Korean can spare *cute* the danger of forming contradictory ordering with regards to R, T and Rel, the presence of the silent copy *CAT* will still require *cute* to follow it once and for all. If *cute* was to undergo LBE, we would want the AP to move to Spec,RP, or we would want either remnant RP movement or remnant TP movement to happen, each of which is impossible under CL as seen in the Mandarin case.

- (17) ***Kwuyye-un**_i neyka [DP*t*_i koyangi]-lul pwa-ss-ta.
 cute-REL you.NOM cat -ACC see-PST-DEC

- (18) a. $[_{RP}CAT [_{R'}[_{AP}cute] R]]:$
 $CAT;cute;R$
- b. $[_{NP}[_{RelP}CAT; [_{Rel'}[_{TP}[_{RP}t_j [_{R'}[_{AP}cute] R] T] Rel]]] [_{NP}cat]]:$
 $CAT;cute;R;T;Rel;cat$
- c. $[_{XP}[_{AP}cute]_i [_{X'}X [_{TP}you [_{VP}[_{NP}CAT t_i R T Rel cat] see]]]]:$
 $cute;you;CAT;R;T;Rel;see$

The straightforward intuition behind this is that in a matching RC, the operator must be sitting on the very edge of the RelP. The spell-out of this RelP will result in a linearization where the operator precedes all the other elements inside the RC.

5 Conclusion and Implications

Many languages that lack overt articles allow LBE from NP (Bošković 2004). However, though Mandarin, Japanese and Korean all lack overt articles, LBE from NP rarely happens. In this paper, I focus on why adjectives cannot be fronted in MJK. I have shown that this impossibility of adjectives LBE can be explained by the analysis that MJK all have a matching RC structure for adjectival modification and that CL disallows adjectives from being extracted from RCs. It is expected that languages that allow adjectival LBE should not have a matching RC structure for adjectives. In other words, if a language employs a relative clause in adjectival modification, we can predict that adjectives in this language must not be fronted away from nouns. The necessary conditions of adjectival LBE, besides the lack of overt determiners as mentioned by Bošković (2004), should also include a non-RC structure for adjectival modification.

Acknowledgments

I express my gratitude to Stephanie Harves. I also want to thank anonymous reviewers and all the audience at the 30th conference on Japanese/Korean linguistics. All errors are mine.

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