Multiple allomorphs and syntactic copies

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Abstract

This work raises the question of whether or not more than one allomorph can surface when multiple syntactic copies are spelled out via movement. I provide evidence from Korean noun phrases in suggesting that this is possible. The work sheds light on the locality domain necessary for the realization of these allomorphs. It also provides a syntactic analysis which does not appeal to post-syntactic operations such as Lowering and Impoverishment. The current work provides a parsimonious take on how allomorphs can be realized together.

Keywords: allomorphy, syntactic copies, locality domain, Distributed Morphology

1 Introduction

An allomorph, call it α, is often realized in the absence of its elsewhere form, call it β. Quite interestingly, however, there are cases where α and β co-occur. (1), for instance, shows that the Hebrew verb 'to read' is spelled out as *likro* and *kara* via verb doubling.

(1) **likro**, hu **kara** et ha-sefer.
read.INF he read ACC the-book
'As for reading, he read the book.' (Hebrew; Landau 2006: 50)

In this paper, I demonstrate that multiple allomorphs, α and β, are realized linearly adjacent to one another in certain Korean noun phrases as shown in (2).

(2) a. sayng-**il**-**nal**
birth-day-day
'birthday'
b. hay-**pyen**-**ka**
sea-side-side
'seaside' (Korean)

I argue that the syntactic configuration of the allomorphs in (2) is subject to locality conditioning discussed in Distributed Morphology (DM; Halle and Marantz 1993, Bobaljik 2012, Harley 2014). I propose that spelling out multiple syntactic copies via movement best captures the realization of these linearly adjacent allomorphs in Korean.

2 Linearly adjacent allomorphs

Korean has phonologically unrelated morphemes which are semantically identical to one another (Choi 2019). These allomorphs, which I refer to as α and β, can surface together inside a nominal domain without changing the base semantics of the noun as shown in (3). The inner allomorph α is obligatory whereas the outer allomorph β is not. There is a restriction on the ordering of α and β: the linear order α-β is possible whereas *β-α is not. (3) illustrates these points:

(3) a. hyu-**il**(-**nal**) / *hyu-nal(-il)
rest-day(-day)
'holiday'

b. hay-**pyen**(-**ka**) / *hay-ka(-pyen)
sea-side(-side)
'seaside'

c. hyen-**mi**(-**ssal**) / *hyen-ssal(-mi)
rough-rice(-rice)
'rough uncooked rice'[1]

d. may-**hwa**(-**kkoch**) / *may-kkoch(-hwa)
ume-flower(-flower)
'an ume flower'

e. tan-**pal**(-**meli**) / *tan-meli(-pal)
short-hair(-hair)
'short hair'

f. che-**ka**(-**cip**) / *che-cip(-ka)
wife-house(-house)
'wife's parents' house'

g. ka-**sa**(-**il**) / *ka-il(-sa)
house-work(-work)
'housework'

(Korean, (3a), (3f), and (3g) from Choi 2019)

Between the two linearly adjacent allomorphs, α is Sino-Korean (SK) and β is Native-Korean (NK). SK morphemes are borrowed from Chinese whereas NK morphemes are purely Korean. The former are often categorized as bound morphemes which require the presence of another SK morpheme.[2] The latter are categorized as free morphemes that can stand alone. The allomorphs shown in (3) are classified as either α (SK) or β (NK) in (4):

(4)

Example	α (SK)		β (NK)	
(3a)	*il*	'day'	*nal*	'day'
(3b)	*pyen*	'side'	*ka*	'side'
(3c)	*mi*	'rice'	*ssal*	'rice'
(3d)	*hwa*	'flower'	*kkoch*	'flower'
(3e)	*pal*	'hair'	*meli*	'hair'
(3f)	*ka*	'house'	*cip*	'house'
(3g)	*sa*	'work'	*il*	'work'

At first glance, the co-occurence of α and β may run counter to the notion of complementary distribution. However, we will see in sections 3 and 4 that the co-occurence of the root allomorphs in (3) is derived via movement of the same syntactic copy undergoing multiple spell out.

3 What triggers root suppletion?

Cross-linguistic evidence from Hiaki (Harley 2014), Georgian (Lomashvili 2019), and Creek (Johnson) suggests that the sister of a root triggers root suppletion. Harley (2014) demonstrates that a set of Hiaki verbs undergoes allomorphy based on the number feature (singular or plural) of its internal argument. (5), for instance, shows that the form of the verb *mea∼sua* 'to kill' is determined by its sister *koowi(-m)* 'pig(s)':

(5) a. Santos Hose-ta koowi-ta **mea**-ria-k.
Santos Jose-ACC pig-ACC kill.SG-APPL-PRF
'Santos killed a pig for Jose.'

b. Santos Hose-ta koowi-m **sua**-ria-k.
Santos Jose-ACC pig-PL kill.PL-APPL-PRF
'Santos killed pigs for Jose.' (Hiaki, Harley 2014: 261)

Lomashvili (2019) adds weight to the claim that the sister of a root can trigger allomorphy. Evidence comes from Georgian. (6) shows that the verb *gdo∼q'ar* 'to throw' is suppletive and is conditioned by the number feature of the internal argument *satamasho(-eb)* 'toy(s)'. Note that allomorphy is not triggered by an applied argument such as *bavshv(-eb)-s* 'for the kid(s)' as shown in (6c). This is not surprising given Lomashvili's assumption that applied arguments are not in a sister relation with the root.

(6) a. Laura-m bavshv-s satamasho gada-u-**gdo**.
Laura-ERG kid-DAT toy-ø PVB-PV-throw.SG
'Laura threw away the toy for the kid.'
b. Laura-m bavshv-s satamasho-eb-i gada-u-**q'ar**-a.
Laura-ERG kid-DAT toy-PL-NOM PVB-PV-throw.PL-3S.SG
'Laura threw away the toys for the kid.'
c. Laura-m bavshv-eb-s satamasho gada-u-**gdo**.
Laura-ERG kid-PL-DAT toy-ø PVB-PV-throw.SG
'Laura threw away the toy for the kids.' (Georgian, Lomashvili 2019: 40)

Johnson also argues that the sister of a root can condition root suppletion in Creek. (7), for instance, shows that the verb *léy∼ká:∼apó:* 'to sit/set' is a suppletive triplet conditioned by the number feature (i.e., singular, dual, plural) of the object *pú:si* 'cat(s)'.

(7) a. pú:si -n tak- **léy**hc -ey -s (SG)
cat -ACC LOC- set.SG.PFV -1SA -IND
'I put the cat down.'
b. pú:si -n tak- **ká:**hy -ey -s (DU)
cat -ACC LOC- set.DU.PFV -1SA -IND
'I put (two) cats down.'
c. pú:si -n tak- **apó:**hy -ey -s (PL)
cat -ACC LOC- set.PL.PFV -1SA -IND
'I put the cats down.' (Creek, Haas 1948: 245, Johnson's gloss)

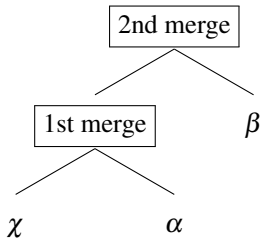
I argue alongside Harley (2014), Lomashvili (2019), and Johnson and demonstrate that the sister of a root can condition root suppletion in Korean. Based on our discussion in section 2, α (SK) has to first merge with another SK morpheme, call it χ, instead of β (NK). In

other words, an SK morpheme needs to merge with another SK morpheme before an NK morpheme enters the derivation. Based on this assumption, the following prediction can be established: χ (SK) and β (NK) cannot be realized together in the absence of an SK morpheme such as α. This prediction is borne out:

(8) a. hyu-il / *il-nal / *hyu-nal
birth$_{SK}$-day$_{SK}$ / day$_{SK}$-day$_{NK}$ / birth$_{SK}$-day$_{NK}$
b. hay-pyen / *pyen-ka / *hay-ka
sea$_{SK}$-side$_{SK}$ / side$_{SK}$-side$_{NK}$ / sea$_{SK}$-side$_{NK}$
c. hyen-mi / *mi-ssal / *hyen-ssal
rough$_{SK}$-rice$_{SK}$ / rice$_{SK}$-rice$_{NK}$ / rough$_{SK}$-rice$_{NK}$
d. may-hwa / *hwa-kkoch / *may-kkoch
ume$_{SK}$-flower$_{SK}$ / flower$_{SK}$-flower$_{NK}$ / ume$_{SK}$-flower$_{NK}$
e. tan-pal / *pal-meli / *tan-meli
short$_{SK}$-hair$_{SK}$ / hair$_{SK}$-hair$_{NK}$ / short$_{SK}$-hair$_{NK}$
f. che-ka / *ka-cip / *che-cip
wife$_{SK}$-house$_{SK}$ / house$_{SK}$-house$_{NK}$ / wife$_{SK}$-house$_{NK}$
g. ka-sa / *sa-il / *ka-il
house$_{SK}$-work$_{SK}$ / work$_{SK}$-work$_{NK}$ / house$_{SK}$-work$_{NK}$

(8) suggests that α and β are not in a sister relation. Instead, it shows that χ and α can form a constituent in the absence of β. The way that allomorphy is conditioned in (8) is consistent with how allomorphy is conditioned in Hiaki (5), Georgian (6), and Creek (7). In all of these cases, the root and its sister form the necessary domain for root suppletion. To put it in another way, χ conditions the realization of α in a sister relation. This suggests that the elsewhere form, namely β, resides *outside* this domain. A preliminary tree structure for (3) is provided in (9):

(9) Preliminary tree structure for (3)



With this in mind, we are now in a position to address where exactly α and β reside in syntax. In what follows, I put forward a movement-based analysis to capture the distribution of the two allomorphs.

4 Syntactic movement & copies

As mentioned in section 2, α is semantically identical to β. Recall that χ-α and χ-α-β are identical in semantics as exemplified in (3). This suggests that α and β cannot both contribute to the semantic make-up of χ-α-β. How might this be possible? I argue that a syntactic analysis provides an adequate explanation. I posit that α and β are the same syntactic copies subject to movement. Adopting DM, I establish the following Vocabulary Insertion (VI) rule for α and β.

(10) Vocabulary Insertion (VI) at PF

a. $\sqrt{} \leftrightarrow \alpha$ / [$_{\sqrt{P}}$ χ ——]

b. $\sqrt{} \leftrightarrow \beta$ / elsewhere

Here, the realization of α and β are contextually determined. The co-occurence of α and β is simply a result of spelling out the lower and the higher copy in different parts of the structure. This correctly predicts that χ-α is semantically identical to χ-α-β. Simply put, α and β are the *same* element in syntax.

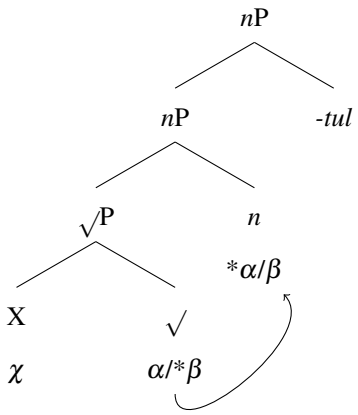
I further posit that deriving α and β is possible via root ($\sqrt{}$)-to-*n* movement. First, this captures the correct morpheme order when the plural/associative marker *-tul* is introduced in the derivation. (11) shows that *-tul* follows α and β. *-Tul* cannot intervene between α and β.

(11) hyu-il-nal**-tul** / *hyu-il-**tul**-nal
rest-day-day-TUL / rest-day-TUL-day
'holidays'

Kim and Melchin (2018a,b) assume that *-tul* is an *n*P modifier. Based on Kim and Melchin (2018a,b), the morphemes preceding *-tul* is in principle a property internal to *n*P. Hence, it

is plausible to assume that the linearly adjacent allomorphs are a result of $\sqrt{}$-to-*n* movement as shown in (12):

(12) Tree structure adopting Kim and Melchin (2018a,b)

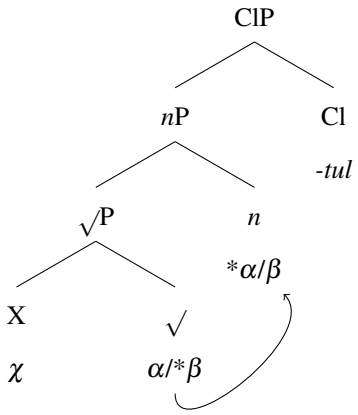


Park (2022), on the other hand, posits that *-tul* is realized in Cl(assifier), which is a head structurally higher than *n*. Under her analysis, *-tul* individualizes mass nouns, which are not countable on their own. It is worth mentioning that the nominal expression *hyen-mi-ssal* 'rough uncooked rice', hosting α and β, is an inherently mass noun. It cannot be realized with *-tul* as shown in (13). This is the case even when β is absent in the derivation:

(13) hyen-mi-ssal(*__-tul__) / hyen-mi(*__-tul__)
rough-rice-rice-TUL
'rough uncooked rice (mass)'

Based on (13), it becomes evident that the realization of *-tul* does not rely on the realization of β. This suggests that the movement involved in deriving β does not target Cl since ClP is absent for mass nouns such as (13). Putting these pieces together, $\sqrt{}$-to-*n* movement rather than $\sqrt{}$-to-Cl movement seems to provide a plausible account for deriving α and β even under Park (2022)'s analysis:

(14) Tree structure adopting Park (2022)[3]



For present purposes, it is not crucial to adjudicate between Kim and Melchin's and Park's analyses. Neither of them poses a challenge to the current take on the linearly adjacent allomorphs in Korean. What is crucial, however, is that $\sqrt{}$-to-*n* movement (rather than some other type of movement) accounts for the ordering of α, β, and *-tul* (see Choi 2019: 300–301 for additional evidence that α and β cannot be intervened by other elements). The assumption made so far suggests that the locality domain for suppletion is $\sqrt{}$P: α is realized inside $\sqrt{}$P whereas β is realized outside of it.

A question remains as to why the lower copy α is obligatory whereas the higher copy β is not. I argue that α (the marked form) must be realized in order to satisfy its SK featural requirement:[4] a morpheme with the feature [SK] needs to be spelled out by having its feature checked by another morpheme bearing [SK]. The higher copy β (the unmarked form) is not subject to this featural requirement, since the requirement has already been satisfied by its lower copy α. Optionally spelling out β via head movement is possible as it has no direct consequences to the semantics.[5]

In the next section, I provide cross-linguistic evidence suggesting that the realization of multiple syntactic copies subject to allomorphy is indeed possible via head movement.

5 Cross-linguistic evidence for spelling out multiple copies

Evidence that head movement can induce the spell-out of multiple allomorphs comes from Ewe bipartite negation. As shown in (15), the preverbal negation marker *mé-* and the post-verbal negation marker *o* are realized together in order to induce negation.

(15) Kofí **mé-**kpɔ́ ame áɖéké **o**
Kofi NEG_1-see person any NEG_2
'Kofi didn't see anybody.' (Ewe; Collins et al. 2018: 341)

Collins et al. (2018) argue that the post-verbal marker *o* is structurally higher than the pre-verbal marker *mé-*. Evidence comes from fragment answers. In (16b), which is a fragment answer to the question (16a), the negative polarity item (NPI) is obligatorily realized with *o* instead of *mé-*.

(16) a. ame ka-é ne-kpɔ́
person which-FOC 2SG-see
'Who did you see?'
b. ame áɖéké (*o)
person any NEG_2
'Nobody' (Ewe; Collins et al. 2018: 350)

According to Collins et al. (2018), (16b) involves TP-ellipsis. The post-verbal marker *o* survives the derivation because it is realized in C, unlike *mé-* which is realized in T. More crucially, Collins et al. (2018) posit that the realization of *mé-* and *o* is a result of spelling out of the lower and the higher copy participating in head movement.

Furthermore, the realization of multiple allomorphs in Hebrew verb doubling can be derived via head movement (see Landau 2006). (17), repeated from (1), shows that the verb 'to read' is spelled out multiple times in different forms, namely *likro* and *kara*.

(17) **likro**, hu **kara** et ha-sefer.
read.INF he read ACC the-book
'As for reading, he read the book.' (Hebrew; Landau 2006: 50)

Likewise, the empirical facts collected from Polish predicate clefting show allomorphy. In (18), for instance, the predicate 'to be' is spelled out as *by* and *jeste*.

(18) {?**by**-ć / *jeste-ć} w domu, **jeste**-śmy.
{?be-INF / *be.PRES-INF} in house be.PRES-1pl
'As for being at home, we are.' (Polish; Arregi and Pietraszko 2021: 280)

Overall, the realization of multiple allomorphs observed in bipartite negation and verb doubling/predicate clefting provide independent evidence that multiple allomorphs can be realized via head movement. Here, parallels can be drawn between the clausal and the nominal domain: the co-occurence of allomorphs via movement is possible in both domains. If the current analysis is on the right track, an overarching implication may be that all instances of multiple allomorphs are derived via movement. In this regard, the co-occurence of multiple allomorphs that Inkelas and Zoll (2005) report across languages (e.g., Paamese, Sye, Kawaiisu, and Central Vanuatu) may be framed under a syntax-driven approach.

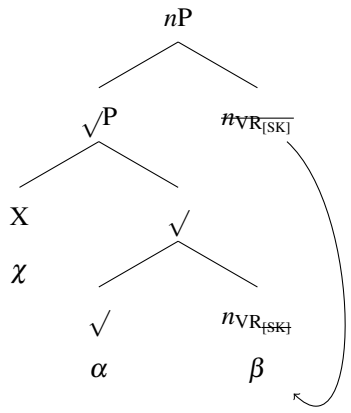
6 A previous analysis relying on post-syntactic operations

An alternative analysis to the one proposed in this paper involves applying multiple post-syntactic operations. Choi (2019) posits that a vacuous reduplication (VR) morpheme is syntactically merged in n. After spell-out, the VR morpheme undergoes Lowering. This forms a sister relation between the VR morpheme and the root α. The sister relation is subject to the Impoverishment rule in (19).

(19) Impoverishment rule (Choi 2019: 307)
Delete the marked Class feature [SK] on a terminal root node in the context of VR morpheme on n.

As a result of Impoverishment, the VR morpheme is deprived of its [SK] feature and the unmarked/default form β is inserted as its phonological form during VI. (20) fleshes out the derivation based on Choi (2019)'s analysis.

(20) Tree structure based on Choi (2019)



In short, Choi (2019) postulates the following: (i) a VR morpheme, (ii) Lowering, and (iii) Impoverishment. The analysis put forward in this paper does away with these post-syntactic assumptions. Instead, syntactic copies and movement, which are robustly assumed elsewhere in the grammar, are employed to account for the same phenomenon. In this regard, the analysis provided in this work is parsimonious. Recall that Collins et al. (2018) and Arregi and Pietraszko (2021) argue for a similar kind of derivation for bipartite negation in Ewe and verb doubling/predicate clefting in Hebrew and Polish. (see section 5).

Setting aside the issue of parsimony, Choi's analysis faces a couple of challenges. Choi (2019) argues that the VR morpheme copies the semantic content of the root in PF. Here, a question arises: if a semantic feature is copied and its phonological form (β) is irrelevant to the phonological form of the root (α), why should this issue be taken up in PF? This assumption seems to be speculative.

An additional question that remains to be answered is the *timing* of reduplication for Choi. According to Haugen (2011) and Deal (2016), phonological reduplication takes place very late during the derivation in PF. In fact, they suggest that reduplication is an instance of a phonological rule which comes after Vocabulary Insertion (VI). Choi's reduplication, however, occurs before VI. This seems to be an assumption that is inconsistent with the general notion of reduplication and what has been discussed in the previous literature.

Overall, relying on multiple post-syntactic apparatuses does not seem to be desirable: (i) it makes extra assumptions about the derivation and (ii) it is inconsistent with the general notion of reduplication put forward in the literature.

7 Conclusion

I have argued that the linearly adjacent allomorphs in Korean noun phrases are generated by spelling out multiple copies via movement. This in many ways patterns together with the analyses suggested for deriving allomorphs in the clausal domain. Further, the current analysis does not involve additional assumptions about post-syntactic devices. The previous analysis adopting post-syntactic operations is not entirely satisfactory in that it requires conjectures that are neither well-motivated elsewhere in the grammar nor consistent with the notion of reduplication previously established in the literature. The implication here is that the realization of multiple allomorphs can be captured under a syntax-driven DM analysis, which provides a parsimonious take on the issue.

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Notes

[1]As for *hyen-mi-ssal* ‘uncooked brown rice’ and *hyen-mi-pap* ‘cooked brown rice’, I assume the former involves spelling multiple allomorphs whereas the latter involves compounding two different morphemes. This seems to be on the right track given that *hyen-mi* on its own means ‘uncooked brown rice’ rather than ‘cooked brown rice’. Only *ssal* in *hyen-mi-ssal* displays vacuous semantics.

[2]Choi (2019) mentions that there are a limited number of SK morphemes which can stand alone such as *san* ‘mountain’ and *kang* ‘river’. For now, I leave this issue aside.

[3]ClP is absent for mass nouns such as (13).

[4]Choi (2019) argues that there is a reserved root class for SK morphemes in Korean.

[5]Note that in many cases head movement does not bear semantic consequences. The presence of V-to-T movement in French, and the lack of it in English (Pollock 1989), for instance, do not involve any obvious semantic differences.