The Identities of the Stem-final Consonants of p- and t-irregular Verbs in Korean

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This paper explores to identify the stem-final consonants of p- and t-irregular verbs in Korean within the framework of Government Phonology. Since the advent of Generative Phonology, the phenomenon of irregular verbal conjugation has been of great interest to Korean phonologists both in linear and non-linear approaches. When we examine these analyses, we find that one of the major issues concerns the identities of the stem-final consonants of p- and t-irregular verbs. The proposals concerning this issue vary considerably from one another. In this paper, I put forward a different view from those proposals in that the stem-final consonants of p- and t-irregular verbs are tensed p' and t' respectively.

1. Introduction

What is the difference between so-called regular and irregular verbs in Korean? (1) and (2) illustrate some of conjugations of p- and t-regular verbs, and p- and t-irregular verbs respectively. Following the proposal of Kim-Renaud (1975), I assume that the length of the stem-final vowel of irregular verbs is long.

(1) regular verb

gloss	indicative	conjunctive	stative	connective
'to wear'	ipt'a	ipk'o	ipə	ipɨmjə
'to bury'	mutt'a	mutk'o	mutə	mutɨmjə

(2) irregular verb

gloss	indicative	conjunctive	stative	connective
'to grill'	ku:pt'a	ku:pk'o	kuwə	kuumjə
'to ask'	mu:tt'a	mu:tk'o	murə	murɨmjə

(stem-final consonants are underlined.)

Given the examples of p- and t-regular verbs set out in (1), we can see that the stem-final consonants of p- and t-regular verbs remain unaltered throughout derivation. With respect to irregular verbs in (2), we can see that there are consonant alternations between p and w, and t and r in p- and t-irregular verbs respectively, i.e. lenis p and t occur before a consonant (cf. indicative and conjunctive forms), but, w and r occur before a vowel (cf. stative and connective forms). We also observe vowel length alternation in the irregular verbal conjugation. A long vowel retains its length before a consonant (cf. indicative and conjunctive forms), but we see vowel-shortening before a vowel (cf. stative and connective forms).

There have been many proposals on the identities of stem-final consonants of p-and t-irregular verbs in linear and non-linear approaches. The proposals concerning this issue, C-W Kim (1972) and H-S Sohn (1987) among others claim that w and r are the underlying stem-final consonants of p- and t-irregular verbs. Kim-Renaud (1975), S-G Kim (1977) P-K Lee (1978), S-C Ahn (1985) and K-H Kim (1987) propose that lenis p and t are the underlying forms for p- and t-irregular verbs respectively.

2. Theoretical Background

In this section, I introduce some important notions of Government Phonology on which this paper is based (cf. Kaye, Lowenstamm & Vergnaud 1985 and 1991). The core notion of Government Phonology is, as its label suggests, the notion of government. One of the important roles of government is to determine a non-ambiguous syllabification for a given phonological string consisting of a sequence of skeletal points to which segments are associated. Syllabification is based on governing relations which are established at the level of lexical representation. Needless to say, we cannot account for phonological phenomena in an adequate way without considering syllabification. In this sense, government provides prime motivation for phonological processes.

Government Phonology recognises three syllabic constituents: O (onset), N (nucleus) and R (rhyme). Constituents and segments are linked to each other via skeletal points as illustrated in (3).

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(3)   O    R    (constituent level)
      |    |
      |    N
      |    |
      x    x    (skeletal level)
      |    |
      σ    σ    (segmental level)
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Both constituent and inter-constituent government are defined as binary, asymmetric relations holding between two skeletal points in question. In order for a governing relation to be established between two skeletal points, the following conditions must be satisfied.

(4.1) The Strict Adjacency Condition

Two positions in a governing relation must be strictly adjacent.

(4.2) The Strict Directionality Condition

In a given governing domain at the skeletal level, the direction of government is universally invariable.

(i) constituent government: head-initial

(ii) inter-constituent government: head-final

(4.3) constituent government

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(a) branching onset      (b) branching nucleus
        O                          R
       / \                         |
      x → x                        N
                                  / \
                                 x → x
```

(4.4) inter-constituent government

(a) government between contiguous nuclei

```
R   O   R
|       |
N       N
|       |
x   ←   x
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(b) government between an onset and the preceding rhymal position

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R         O
| \       |
N  \      |
|   \     |
x    x ←  x
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(the head of each constituent is underlined.)

For any given governing domain, the governing position must possess the appropriate governing properties. These governing properties are determined by the internal structures of the segments associated to the skeletal points. In Government Phonology, a segment is assumed to consist of one or more elements. A segment may consist of a single element or be composed of a combination of elements. Charm is a property of elements which defines their combinational possibilities. Three values of charm are recognised: i) positive, σ^+, ii) negative, σ^-, and iii) neutral (charmless), σ°. In terms of governing roles, charmed as well as charmed segments may be governors, while only charmless segments may be governees. Specifically, a positively charmed segment can be the head of a nuclear constituent, and a negatively charmed segment can be the head of a non-nuclear constituent. Roughly speaking, negatively charmed segments include most obstruents and non-sibiliant fricatives and the set of charmless segments is comprised of nasals, glides, liquids and certain types of obstruents.

Given the notion of charm, consonants in Korean are classified as follows.

(5) (a) charmless segment

nasal: m, n, ŋ   liquid: r, l   lenis obstruent: p, t, k, s, c

b) charmed segment

tensed: p', t', k', s', c'   aspirated: p^h, t^h, k^h, c^h

3. Analysis

Let us reconsider the data given in (2). For convenience, it is repeated in (6).

(6) irregular verb

gloss	indicative	conjunctive	stative	connective
'to grill'	ku:pt'a	ku:pk'o	kuwə	kuumjə
'to ask'	mu:tt'a	mu:tk'o	murə	murɨmjə

(stem-final consonants are underlined.)

When we observe the indicative and the conjunctive forms in which neutralisation takes place, i.e. a consonant-initial suffix follows a stem, we notice that the stem-final segments emerge as lenis p and t. Given those forms, we cannot determine the identities of the stem-final segments of p- and t-irregular verbs, precisely because they may come from one of three types of stops, i.e. lenis, tensed and aspirated. That is, due to the effect of neutralisation, tensed and aspirated segments cannot occur in domain-final position or before a consonant, but lenis stops are realised as they are. In other words, all three types of stops can be candidates of stem-final consonants of irregular verbs.

In terms of Charm Theory as mentioned above, lenis stops are classified as neutral or charmless, and tensed or aspirated ones as negatively charmed. When we consider the context of consonant weakening together with vowel-shortening, i.e. when a vowel-initial suffix follows a stem (cf. the stative and the connective forms), we can make two possible formalisations about the types of segments which may occur in this context with respect to charm values.

(7) (a) Neutral segments are weakened when vowel shortening occurs.

(b) Negatively charmed segments are weakened when vowel shortening occurs.

(7.a) supposes that the stem-final consonants of p- and t-irregular verbs are lenis p and t, while (7.b) supposes that they are either tensed, p' and t', or aspirated p^h and t^h. Let us examine each formalisation in turn. According to (7.a), neutral p and t lenite to w and r respectively when vowel shortening occurs. Consider how other neutral segments behave in the same context. (8) lists some examples of nasal-final and liquid-final verbs.

(8)

stem	stative	connective	gloss
su:m	sumə	sumɨmjə	'hide'
si:n	sinə	sinɨmjə	'to put on'
i:r	irə	ilmjə	'to happen'

(8) illustrates that only vowel shortening occurs but no lenition occurs. What the data in (8) show is that neutral segments other than neutral stops do not lenite even though vowel shortening occurs. Given the lenition facts (p --> w and t --> r), and the inadequacy of the formalisation of (7.a) to cover all neutral segments, we would require a stipulation that only neutral stops may lenite in this context, but other neutral segments do not. Obviously, this stipulation is as hoc.

Let us consider (7.b). According to (7.b), the stem-final consonants of p- and t-irregular verbs are negatively charmed. With negative charm as a condition, we do not need the ad hoc stipulation that neutral segments such as nasals and liquids are not candidates for lenition when vowel shortening occurs. The remaining question is as to the identities of negatively charmed labial and coronal stops. There are two types of negatively charmed segments available in Korean: tensed and aspirated. Given p- and t-irregular verbal conjugation, however, we cannot determine the stem-final consonants of p- and t-irregular verbs because only their weakened forms occur. i.e. neutral $\underline{p}$ and $\underline{t}$ occur before a consonant-initial suffix due to the effect of neutralisation, and $\underline{w}$ and $\underline{r}$ occur before a vowel-initial suffix. In fact, we may choose either tensed or aspirated segments for the stem-final segments of p- and t-irregular verbs. S-irregular verbs provides a clue to this question. Since s-irregular verb shows exactly the same pattern as p- and t-irregular verbs in that the stem-final segment lenites to zero before a vowel-initial suffix when vowel shortening occurs and a neutral $\underline{t}$ before a consonant-initial suffix by the application of neutralisation as shown below.

(9) s-irregular verb

gloss	indicative	conjunctive	stative	connective
'to pour'	pu:tt'a	pu:tk'o	puə	puɨmjə
'to draw'	kɨ:tt'a	kɨ:tk'o	kɨə	kɨɨmjə

In Korean, there are only two types of coronal fricatives: neutral $\underline{s}$ and tensed $\underline{s}$'. So, if we choose the aspirated $\underline{p}^h$ and $\underline{t}^h$ as the stem-final consonants of p- and t-irregular verbs, only non-neutral segment, tensed $\underline{s}$', can be the corresponding candidate for the stem-final consonant of s-irregular verbs. In this case, two types of segments would be listed in irregular verbs. For this reason, I propose that the stem-final consonant of p- and t-irregular verbs are tensed $\underline{p}$' and $\underline{t}$'.

4. Summary

In this paper, I discuss the identities of the stem-final segments of p- and t-irregular verbs in Korean. Unlike the previous proposals, the stem-final segments of p- and t-irregular verbs are tensed $\underline{p}$' and $\underline{t}$' respectively. My argument is based upon Charm Theory in Government Phonology; if we choose neutral $\underline{p}$ and $\underline{t}$ as the stem-final segments of p- and t-irregular verbs, then we need an ad hoc stipulation that only neutral obstruents other than other neutral segments undergo lenition. Instead, I claim that such stipulation is not required if we choose one of negatively charmed stops.

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