A certain group of stems in SK displays a unique obligatory vowel deletion as a hiatus-resolving process in the environment where optional glide formation or hiatus retention is expected. The linked structure of those stems, reflecting diachronic processes such as palatalization and labialization, insures the satisfaction of highly-ranked $\text{MAX-(F)}$ constraints like $\text{MAX-[back]}$ and $\text{MAX-[round]}$, since the shared features such as [-back] and [round] are still retained by the linked consonant even after vowel deletion.

1. Introduction: Aim and Scope

The main purpose of this paper is to provide the phonological motivation for a certain phonological anomaly in hiatus resolution in (Standard) Seoul Korean (SK, henceforth) in terms of the diachronic residue of synchronic phonology in the framework of Optimality.
Theory (OT, hereafter). The basic rationale behind the notion of the
diachronic residue is that a diachronic phonological process may have
an effect on the underlying representational properties of a certain
group of stems displaying eccentric phonological behaviors in
synchronic phonology. Such phonological idiosyncrasy of exceptional
stems can be accounted for by positing a linked structure of a feature
between the adjacent vowel and consonant, which reflects diachronic
stem-internal assimilation. Without the consideration of diachronic
phonological aspects, the phonological anomaly in hiatus-resolving
processes (especially, in glide formation) cannot be plausibly
motivated in synchronic phonology. It may be at best left as the case
of a random exception.

2. Issue: A Phonological Anomaly in Hiatus Resolution

It is a well-attested cross-linguistic tendency that languages disfavor
adjacent heterosyllabic vowel sequences such as V₁V₂. Such phonologically
-disfavored hiatus constructions are resolved by a variety of
phonological strategies, as schematized in (1).¹

(1) Strategies of Hiatus Resolution (Casali 1996; J-K Kim 2000a)²

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¹ The phonological motivation of hiatus resolution has been generally accounted for
in terms of the undesirability of onsetless syllables (Casali 1996, Rosenthal 1994, 1997,
among others), compared with a canonical syllable such as CV. That is, through
hiatus-resolving strategies, the second vowel of a VV construction can avoid being
parsed into an onsetless syllable. However, Pulleyblank (1998) asserts that hiatus
resolution is not always onset-driven. In his analysis of Yoruba vowel patterns,
foot-based minimality conditions are responsible for vowel deletion as a hiatus-resolving
strategy.
a. **Hiatus Resolution**

Vowel Deletion: \((C)V_1V_2 \rightarrow .(C)V_1\) or \((C)V_2\).

Epenthesis: \((C)V_1V_2 \rightarrow (C)V_1\, CV_2\) or \((C)V_1\, GV_2\).

Glide Formation: \((C)V_1V_2 \rightarrow (C)GV_2\).

Diphthong Formation: \((C)V_1V_2 \rightarrow .(C)V_1\, V_2\).

Coalescence: \((C)V_1V_2 \rightarrow (C)V_3\).

b. **Hiatus Retention**

Heterosyllabification: \((C)V_1V_2 \rightarrow (C)V_1\, V_2\).

SK displays the entire variety of hiatus resolving strategies except diphthong formation, as the following (2) shows. SK is a typical example of a language lacking off-glide diphthongs and thus, diphthong formation is not a possible strategy.

(2) **Hiatus-Resolving Processes in SK**

a. **Hiatus Resolution**

Vowel Deletion: \(/s^i-\partial/ \rightarrow [s^\prime \partial]\) ‘write, use, put on’

Glide Insertion: \(/ki-\partial/ \rightarrow [k\, y\partial]\) ‘crawl’

Glide Formation: \(/po-\partial/ \rightarrow [p\, wa]\) ‘see’

Coalescence: \(/s\, a/ \rightarrow [s\, c]\) ‘interval’

b. **Hiatus Retention**

Heterosyllabification: \(/cu-\partial/ \rightarrow [c\, u\, \partial]\) ‘give’

When the first vowel of a hiatus context is either high front (/i/) or a round non-low back vowel (/o, u/), a hiatus context is resolved by making \(V_1\) a homorganic glide. As a hiatus-resolving strategy, glide formation in Korean is an optional process in most cases, as in (3).

---

2. ‘\(G\)' denotes ‘glide’ and ‘\(\,\)' indicates the syllabic boundary.

(3) Optional Glide Formation

<table>
<thead>
<tr>
<th>a</th>
<th>ki-e</th>
<th>kia ~ kya:</th>
<th>'crawl'</th>
</tr>
</thead>
<tbody>
<tr>
<td>p'ye-e</td>
<td>p'yia ~ p'ya:</td>
<td>'bloom'</td>
<td></td>
</tr>
<tr>
<td>pi-e</td>
<td>pia ~ pya</td>
<td>'be empty'</td>
<td></td>
</tr>
<tr>
<td>p'ia-e</td>
<td>p'ya ~ p'ya:</td>
<td>'sprain'</td>
<td></td>
</tr>
</tbody>
</table>

b. cu-e | cuia ~ cwa: | 'give' |
| tu-e | tua ~ twa | 'put' |
| po-a | poa ~ pwa | 'see' |
| s'oa-a | s'oa ~ s'wa: | 'shoot' |

In the case that an onsetless stem-final syllable is concatenated with a vowel-initial suffix, glide formation has to be an obligatory process, as in the following data in (4).

(4) Obligatory Glide Formation

<table>
<thead>
<tr>
<th>a</th>
<th>i-e</th>
<th>ia</th>
<th>*ia(?</th>
<th>'tile over'</th>
</tr>
</thead>
<tbody>
<tr>
<td>mot-e</td>
<td>moyia</td>
<td>*moe</td>
<td>'gather'</td>
<td></td>
</tr>
<tr>
<td>koi-e</td>
<td>koya</td>
<td>*koe</td>
<td>'be stagnant'</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>o-a</td>
<td>wa</td>
<td>*oa</td>
<td>'come'</td>
</tr>
<tr>
<td>s'au-e</td>
<td>s'awa</td>
<td>*s'aua</td>
<td>'fight'</td>
<td></td>
</tr>
<tr>
<td>pem-e</td>
<td>pemia</td>
<td>*pemia</td>
<td>'learn'</td>
<td></td>
</tr>
</tbody>
</table>

Related to the process of glide formation, there is an interesting case of vowel deletion which needs a more careful observation. As the data in (5) show, a certain set of stems displays obligatory vowel deletion, even though the relevant segmental environment seems to require optional glide formation as in (3).

(5) Obligatory Vowel Deletion

<table>
<thead>
<tr>
<th>a</th>
<th>ci-e</th>
<th>*cia</th>
<th>*cyia</th>
<th>'fall, lose, shoulder'</th>
</tr>
</thead>
</table>
KIM The Diachronic Residue in Phonological Representation

\[ c'1\theta \rightarrow c\emptyset (\ast c'y\emptyset, \ast c'i\emptyset) \] 'steam'

\[ c'h\theta \rightarrow c'h\emptyset (\ast c'h\emptyset, \ast c'h\emptyset) \] 'hit'

\[ b \ p^h u\emptyset \rightarrow p^h\emptyset (\ast p^h w\emptyset, \ast p^h u\emptyset) \] 'drum'

Two simple questions can be easily raised, regarding the anomalous aspect of hiatus resolution in (5) Why is vowel deletion selected as the optimal hiatus-resolving process over glide formation? Why is the designated hiatus-resolving process (vowel deletion) obligatory? In answering these questions, the present analysis is crucially based on the unique representational properties of underlying inputs, focusing on the faithful corresponding relation between input features and output features.

3. OCP-Based Analysis

Since P-G Lee(1978) pointed out the exceptionality of the data in (5), it has been generally analyzed as glide formation, not as vowel deletion, based on a derivational procedure like (6).

\[ (6) /ci\theta/ \rightarrow cy\emptyset \rightarrow [ca] \]

(glide formation) \quad (/y/-deletion)

The Obligatory Contour Principle (OCP) has been often presented as the phonological condition on the deletion of the glide /y/, generating the output like [cə], instead of [c'ya].

\[ (7) \text{The Obligatory Contour Principle (OCP)} \]

At the melodic level, adjacent identical elements are prohibited

(McCarthy 1986)
That is, the deletion of /y/ is the natural result of the overlap of the feature [-back] ([palatal]) between palatal consonants and /y/. The OCP, however, cannot provide the correct motivation of obligatory vowel deletion in this case. The OCP may motivate the deletion of /y/ adjacent to a palatal consonant, but it cannot accounted for why the eventual vowel deletion should be an obligatory process. To be more specific, it is still mysterious why the unresolved hiatic form like *[c1a] does not cooccur unlike in (3). In the proposed assumption of the linked structure in the present study, in contrast, such an obligatoriness of vowel deletion in (5) is a well-expected pure result of featural faithfulness, as analyzed in detail later.

4. Vowel Deletion

1) Introduction

One of the most prominent characteristics of hiatus resolution in SK is its feature-sensitivity. Unlike many languages which display a position-sensitive tendency, especially in the strategy of vowel deletion (Casali 1996; Rosenthal 1994, 1997), SK adopts a mechanism of vowel deletion which is purely sensitive to the featural properties of pertinent vowels. Certain vowels are systematically deleted in order to avoid onsetless syllables from surfacing, regardless of their position (that is, the position of either V₁ or V₂). Such feature-sensitivity of vowel deletion has been often accounted for under the notion of phonological strength (Hooper 1976) in previous studies. That is, in a V₁V₂ context, the relatively weaker vowel in phono-
logical strength is the target of vowel deletion.

SK vowel deletion can be divided into obligatory vowel deletion and optional vowel deletion by the aspect of their operation. As discussed in detail in J-K Kim (2000a), optional vowel deletion is closely related to speech style. That is, optional vowel deletion occurs only in casual speech. This can be accounted for in terms of a floating constraint whose ranking relation is variable, pending on speech style.

2) Obligatory Vowel Deletion

There are only two cases of vowel deletion in SK hiatus resolution which occur in the obligatory fashion, regardless of speech style: /i/-deletion and identical vowel deletion.

2. 1 /i/-Deletion

In the concatenation of morphemes which involves either /i/-final stems or /i/-initial suffixes, hiatus is resolved by deleting /i/ in a systematic way as seen in (8) Due to its obligatory deletion in a

---

4. In rule-based approaches, such /i/-deletion has been generally described as a mirror-image rule as follows (P-G Lee 1976; Kim-Renaud 1982 and others).

\[ /i/ \rightarrow \emptyset \% V \text{ (obligatory)} \]

However, there actually exist certain cases where /i/-deletion is optional even in suffixation (in the lexical passive construction).

- \[ s'i' → s'i' \text{ } \sim \text{ } s'i \text{ 'be used'} \]
- \[ t'i' → t'i' \text{ } \sim \text{ } t'i \text{ 'be found'} \]
- \[ t'h'i' → t'h'i' \text{ } \sim \text{ } t'h'i \text{ 'be opened'} \]

Y-S Lee (1993) insightfully analyzes such optionality of /i/-deletion found in the passive construction in terms of the minimalness condition imposed on the morphemic quantitative size of derived words in Korean.
hiatus context, the vowel /i/ has been analyzed as the weakest vowel in SK in terms of phonological strength in previous studies. In a number of approaches based on the mechanism of underspecification, /i/ has been represented as the least marked vowel with no specified features in the underlying representation.

\[(8) \ s'1\-\theta \rightarrow s'\theta \ 'write' \quad t'1\-\theta \rightarrow t'\theta \ 'float' \]
\[k'1\-\theta \rightarrow k'\theta \ 'turn\ off' \quad \text{pap}'1\-\alpha \rightarrow \text{pap}'\alpha \ 'be\ busy' \]
\[\text{kip}'1\-\alpha \rightarrow \text{kip}'\alpha \ 'be\ happy' \quad \text{ci}-\text{mi} \rightarrow \text{cni} \ 'lose' \]
\[\text{pe}-\text{mi} \rightarrow \text{pemi} \ 'cut' \quad \text{k}'\text{e}-\text{mi} \rightarrow \text{k}'\text{oni} \ 'break' \]
\[\text{so}-\text{mi} \rightarrow \text{sam} \ 'stand' \quad \text{ka}-\text{ni} \rightarrow \text{kani} \ 'go' \]
\[\text{k}'\text{u}-\text{mi} \rightarrow \text{kumi} \ 'dream' \quad \text{k}'\text{o}-\text{mi} \rightarrow \text{koni} \ 'wind' \]

In a featural correspondence approach adopted in the present study, the faithfulness relation between input and output is evaluated at the level of feature, not segment. Therefore, the deletion of a vowel can be understood as a cumulative effect of featural deletion.

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(Morphological Category) Minimality Condition

Derived words are prosodic words (PrWd)

PrWd is minimally trimoramic

However, as discussed in J-K Km (2000a), SK actually allows a number of monomoramic prosodic words even in the derived environments. What is crucial here is that the minimality condition may hold only for the derived passive stems. The lexical passive formation in SK provides a unique morphological structure. Unlike all the other suffixes, the attachment of passive suffixes to the stem creates another stem, not a prosodic word directly. This unique structural property of the passive construction plays a crucial role in the case of trimoramic vowel shortening in SK (J-K Km 1998, 2000a). Optional /i/-deletion may provide another intriguing instance of phonological anomalies of the lexical passive formation in SK phonology.

5 For a more detailed discussion on a featural correspondence approach, compared with a segmental correspondence approach, please refer to J-K Km (2000a)
deletion of [+high] and [+back] in the case of /i/-deletion. The relevant constraint for the deletion of features is MAX-(F).

(9) MAX-(F)
Every feature of the input has a correspondent in the output
MAX-[+high] MAX-[+high] MAX-[+back]
MAX-[+back] MAX-[low] MAX-[round]

Generally, vowel deletion in hiatus occurs when the relevant MAX-(F) constraints are ranked lower than ONSET, the constraint that forces hiatus resolution. The fact that only the vowel /i/ is susceptible to deletion in SK indicates that only the constraints MAX-[+high] and MAX-[+back] of the MAX-(F) constraint family are ranked lower than ONSET, the constraint forcing hiatus resolution. The rest of MAX-(F) family dominates ONSET.

The general ONSET constraint should include some specific condition in order to rule out the possibility of obligatory /i/-deletion in a non-derived environment, that is in a stem-internal context. Within the stem, a hiatus context with /i/ is retained.

(10) müm 'millet' kəlim 'laziness'
maim 'heart' tam 'next'
čəim 'first' kail 'fall'
koil 'county' mət- 'collect'
t‘akha- 'be confused' kəaksəšəp- 'be excessive'

(11) ONSET ₅₀₆

---

6 A detailed account of the derived environment of the constraint ONSET will be provided later
Syllables must have onset in the suffixation (in the derived environment)

The fact that the insertion of a consonant/glide is not a preferable option to /i/-deletion implies that DEP-(F) is a highly-ranked constraint family in SK.

(12) DEP-(F)\footnote{Like MAX-(F), DEP-(F) is also a constraint family which consists of a group of constraints prohibiting the insertion of respective individual features. In the present analysis, however, it is represented as DEP-(F), since epenthesis of a segment except the glide does not play a significant role in SK hiatus resolution.}

Every feature of the output has a correspondent in the input.

The interaction of these constraints results in /i/-deletion in a hiatus context in order to avoid a potential onsetless syllable in suffixation at the cost of the violation of some featural faithfulness constraints. The schematic ranking relation among ONSET\textsubscript{SUFF} and faithfulness constraints can be provided as follows.

(13) DEP-(F) \gg ONSET\textsubscript{SUFF} \gg MAX-[+high] 
      MAX-[+back]
      MAX-[+low]
      MAX-[+round]

By this ranking relation, the correct output of obligatory vowel deletion can be selected as in the following tableau (14) and (15)
(14) /s'i-ọọ/ → [s'ọọ] 'use'

<table>
<thead>
<tr>
<th>/s'i-ọọ/</th>
<th>DEP-(F)</th>
<th>MAX-[hi]</th>
<th>ONSET</th>
<th>MAX-[+hi]</th>
<th>MAX-[+bk]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. s'i.o.ọ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. s'ọ.ọ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. s'i.Cẹ.ẹ</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. s'i.ẹ</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(15) /ci-ini/ → [cini] 'lose'

<table>
<thead>
<tr>
<th>/ci-ini/</th>
<th>DEP-(F)</th>
<th>MAX-[hi]</th>
<th>ONSET</th>
<th>MAX-[+hi]</th>
<th>MAX-[+bk]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ci.i.ni</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. ci.ni</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. ci.Ci.ni</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. ci.ni</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.4.2.2 Identical Vowel Deletion

Another case of obligatory vowel deletion can be detected when two identical vowels form a hiatus construction through suffixation.

(16) s'i-ini → s'ini 'write, use, put on'
    t'i-ini → t'iri 'float'
    ka-a → ka 'go'
    t'a-a → t'a 'pick'
    sọ-ẹ → sọ 'stand'

In this case, the constraint which is responsible for identical vowel

---

8. Here again, syllable boundaries are indicated by the symbol '·'.
9. 'C' denotes any inserted consonant or glide.
deletion\textsuperscript{10} is not ONSET. As discussed above, ONSET only forces the deletion of vowel /i/, but not other vowels, since faithfulness constraints such as $MAX$-[\textit{high}] and $MAX$-[\textit{low}] is ranked higher than ONSET. Therefore, a dominant constraint over all the featural faithfulness constraints is needed in the ranking system of SK. It has been pointed out in a number of studies (McCarthy 1986) that there is a cross-linguistic tendency to avoid sequences of identical elements, whether tones, segments, or individual features. Such a tendency is dubbed under the notion of \textit{Obligatory Contour Principle} (OCP). It is the constraint OCP which forces identical vowel deletion in SK.

(17) OCP (intermorphemic)

At the melodic level, adjacent identical elements are prohibited in suffixation (in the derived environment) (McCarthy 1986)

The constraint OCP in (17) has an effect on the concatenation of the stem and the suffix. In a stem-internal position, identical vowel sequences are retained, which generally reflect diachronic intervocalic consonant deletion. Synchronically, the stem-internal long vowel would have a single root note in underlying representation, and so would not be in violation of the OCP

(18) muu 'radish' khl- 'smoke'
yochim 'these days' kinkha- 'secluded'

\textsuperscript{10} In this study, identical vowel deletion in SK is analyzed as a genuine process of vowel deletion, not as a fusion of two vowels which is sometimes considered as a process with no cost in faithfulness (Keer 1999). As discussed in J-K Kim (2000a, 2000b) in detail, identical vowel deletion invokes no lengthening which would compensate for the loss of a segment.
The dominance of OCP in the constraint ranking system requires the deletion of one of the two identical vowels, regardless of its featural property.

(19) /ka-a/ → [ka] 'go'

<table>
<thead>
<tr>
<th>/ka-a/</th>
<th>OCP</th>
<th>DEP-[F]</th>
<th>MAX-[low]</th>
<th>ONSET_{SUFF}</th>
<th>MAX-[+hi]</th>
<th>MAX-[+bk]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ka.a</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. ka</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. ka.Ca</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. 4. 3 Optional Vowel Deletion

Compared with obligatory vowel deletion whose operation is restricted to either the least marked vowel /i/ or an identical vowel sequence in derived environments, optional vowel deletion in SK displays a robust operation. Optional vowel deletion targets a variety of vowels and all hiatic sequences in a prosodic word, whether derived or non-derived.

(20) Optional Vowel Deletion

A. Vowel-Deletion in Suffixation: /e/-Deletion: /eə eə/ → [e, e]

- seː-e → seə ~ se: 'count'
- peː-e → peə ~ pe: 'cut'
- t'ė-e → t'ėə ~ t'ė: 'take off'
- k'ė-e → k'ėə ~ k'ė: 'wake up'
- c'ė-e → c'ėə ~ c'ė: 'cut open'
- p'ė-e → p'ėə ~ p'ė: 'pull out'

B. Stem-Internal Vowel Deletion

a. /u/-Deletion
məi- → moi- ~ mo- 'collect'
kəli- → keh- ~ ke-li- 'be lazy'

The apparent complex aspect of optional vowel deletion in SK can be characterized by several generalizations.

(21) General Characteristics of SK Optional Vowel Deletion

a. The high back round vowel is deleted in a hiatus context with front vowels or non-high back vowels (/u/-deletion).
b. The mid back vowel is deleted in a hiatus context with non-high front vowels (/a/-deletion).
c. The high front vowel is deleted in a hiatus context with non-high front vowels (/i/-deletion).
d. The low back vowel is deleted in a hiatus context with non-high front vowels (/a/-deletion).

Such generalizations, reflecting the pure feature-sensitivity of the SK hiatus resolving mechanism, is a natural result of the ranking relation among individual constraints of the MAX-(F) constraint family. In other words, constraints which are related to the faithful parsing of each vocalic feature in the input are ranked with respect to one another. It is such a ranking relation that selects a specific vowel as

---

11. In SK optional vowel deletion, all the target vowels of deletion are V2 vowels. However, this does not provide any significant phonological generalization such as positional faithfulness in hiatus resolution. The main reason for such accidental V2-deletion tendency is the limitation of vowel-initial suffixes relevant to optional vowel deletion. As discussed, obligatory vowel deletion clearly indicates that such position-sensitivity of vowel deletion in SK is not valid. The gliding of V1 in glide formation can also be a good argument against the possibility of position-sensitivity in SK hiatus resolution.
the target of vowel deletion. The ranking among \textit{MAX-(F)} constraints can be schematized as follows.

(22) \textit{MAX[-back]} \gg \textit{MAX[-high]} \gg \textit{MAX[round]} \gg \textit{MAX[+high]}
\textit{MAX[low]} \gg \textit{MAX[+back]}

As discussed in detail in J-K Kim (2000a), the phonological variation in a constraint-based system is the result of the variable dominance relation among ranked universal constraints. Narrowing this down into the current analysis of vowel deletion, the variation by optional operation of vowel deletion in SK (hiatus resolution, in general) is the result of a variable ranking relation between a markedness constraint like \textit{ONSET} and faithfulness constraints like the \textit{MAX-(F)} constraint family. When \textit{ONSET} and the individual constraints of the \textit{MAX-(F)} family are interleaved, \textit{ONSET} can force the deletion of only a certain set of vowels (/i/ in SK, more precisely).

However, when \textit{ONSET} dominates all the members of the \textit{MAX-(F)} constraint family, any vowel can be a licit target of vowel deletion, which reflects the stylistic variation of speech from careful speech to casual speech. In this way, phonological variation can be generally accounted for in the constraint ranking system. By the domination of \textit{ONSET} and the specific ranking relation among \textit{MAX-(F)} constraints, optional vowel deletion in SK is analyzed in a neat way.
(23) Optional vowel deletion in casual speech

\[ /\text{se}-\alpha/ \rightarrow [\text{se}:] \ '\text{count}' \]

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. se.\text{g}</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. se:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>c. se:</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

The situation around optional hiatus-resolving processes, however, is rather subtle and complex. As pointed out previously, the optional operation of hiatus-resolving processes in casual speech, are also accompanied by the change of its domain. Specifically, in careful speech, hiatus resolution only occurs in the derived environment, that is, in suffixation, but not in the stem-internal position. However, in casual speech, the process of hiatus resolution can occur, regardless of morphemic structure. This means that with the reranking of ONSET, the evaluative domain of the constraint is also expanded into a prosodic word, ruling out all the hiatic constructions in a prosodic word. Such a treatment of so-called Derived Environment Effect in the constraint system, however, is simple and neat, on the one hand, but too powerful, on the other hand. The expansion of the domain of certain constraints, along with reranking, is a too powerful or too opportunistic way of handling one of the most significant aspects of phonological processes.

Therefore, this study proposes a different mechanism of capturing the Derived Environment Effect in the constraint-based system, by incorporating the morphemic information directly to the constraint. The basic assumption is that the constraint ONSET, and likewise with
all the other domain-sensitive constraints, can be divided into two constraints: a general constraint ONSET which is not domain-sensitive and a more specific constraint ONSET which is domain-sensitive (ONSET_{suff}, in this analysis). In careful speech, the general ONSET constraint is ranked low enough to be inactive in hiatus resolution. Only the activity of a specific ONSET_{suff} constraint is visible in all the hiatus-resolving processes. This is why obligatory vowel deletion which targets /i/ (and a vowel in a sequence of identical vowels) occurs only in the derived environment.

(24) Obligatory Vowel Deletion in Careful Speech

\[
\text{OCP} \gg \text{MAX-[low]} \gg \text{MAX-[+high]} \gg \text{ONSET}_{\text{suff}} \gg \text{MAX-[+high]} \gg \text{ONSET} \gg 12 \gg \text{MAX-[+back]} \gg \text{MAX-[+back]}
\]

(25) /s'i -o/ → [s'ə]

'use, write, put on'

<table>
<thead>
<tr>
<th>/s'i-o/</th>
<th>OCP</th>
<th>MAX-[low]</th>
<th>MAX-[+high]</th>
<th>ONSET_{suff}</th>
<th>MAX-[+high]</th>
<th>MAX-[+back]</th>
<th>ONSET↑</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. s'iə</td>
<td></td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. s'ə</td>
<td></td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. s'i</td>
<td></td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. ma.im</td>
<td></td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. mam</td>
<td></td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. mim</td>
<td></td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In casual speech, the articulatory efficiency is optimized by promoting the general ONSET↑ constraint, which is a floating constraint

12. The floating constraint is indicated by the symbol↑.
(Reynolds 1994; Morris 1998) whose ranking is variable by speech style,\textsuperscript{13} over all the \textit{MAX-(F)} faithfulness constraints. The result is two-fold. Firstly, vowel deletion is no longer domain-sensitive and thus, can occur stem-externally. Secondly, all the vowels, in addition to \textit{\textipa{/i/}}, can be the target of vowel deletion. This is how the optional operation of hiatus-resolving processes occurs with the domain-expansion. The whole picture of optional vowel deletion is provided in (26).

(26) Optional Vowel Deletion

\begin{itemize}
  \item[A.] \textipa{/se-ə/} \rightarrow \textipa{[se]} \sim \textipa{[se]} \ 'count'\textsuperscript{14}
\end{itemize}

\begin{table}[h]
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline
\textipa{/se-ə/} & ONSET & \textit{MAX-} & \textit{MAX-} & \textit{MAX-} & ONSET & \textit{MAX-} & \textit{MAX-} & \textit{MAX-} \\
 & \textit{[low]} & \textit{[-back]} & \textit{[-high]} & \textit{SUFF} & \textit{[round]} & \textit{[+high]} & \textit{[+back]} & \\
\hline
c. se: & & & & & & & & 1 \textsuperscript{14} \\
\hline
d. se & (\textsuperscript{14}) & & & & & & & 1 \textsuperscript{14} \\
\hline
e. se & & & & & & & & 1 \textsuperscript{14} \\
\hline
\end{tabular}
\end{table}

\begin{itemize}
  \item[B.] \textipa{/pi-u-/} \rightarrow \textipa{[pi]} \sim \textipa{[pi]} \ 'make empty'
\end{itemize}

\begin{table}[h]
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline
\textipa{/pi-u-/} & ONSET & \textit{MAX-} & \textit{MAX-} & \textit{MAX-} & ONSET & \textit{MAX-} & \textit{MAX-} & \textit{MAX-} \\
 & \textit{[low]} & \textit{[-back]} & \textit{[-high]} & \textit{SUFF} & \textit{[round]} & \textit{[+high]} & \textit{[+back]} & \\
\hline
d. pi: & & & & & & & & 1 \textsuperscript{14} \\
\hline
e. pi & (\textsuperscript{14}) & & & & & & & 1 \textsuperscript{14} \\
\hline
e. pu: & & & & & & & & 1 \textsuperscript{14} \\
\hline
\end{tabular}
\end{table}

\textsuperscript{13} A more comprehensive discussion on the notion of a \textit{floating constraint} is provided in Reynolds (1994) and Morris (1998). The approach of the floating constraint is quite similar to the reranking of constraints, but is more focused on an individual constraint. That is, by the floating constraint, the phonological variation can be accounted for by the character of an individual constraint, not by the ranking relation among constraints.

\textsuperscript{14} The fatal violation of the floating constraint \textit{ONSET} in casual speech is indicated in the parenthesis.
C. /-olds/- → [olds] ~ [ylbz] 'match'

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<tbody>
<tr>
<td>ə.olds</td>
<td>(*!)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>!</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>ə.olds</td>
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<tr>
<td>c.olds</td>
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D. /kei/- → [kei] ~ [kə:] 'be clear'

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</thead>
<tbody>
<tr>
<td>ə.kei</td>
<td>(*!)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>!</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>ə.kei</td>
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<tr>
<td>c.kei</td>
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</tbody>
</table>

E. /p’as/- → [p’as] ~ [p’as] 'deprive'

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</tr>
</thead>
<tbody>
<tr>
<td>ə.p’as</td>
<td>(*!)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>!</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>ə.p’as</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.p’as</td>
<td></td>
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</tbody>
</table>

The candidates (a) in tableaux (26) would be losing candidates if the floating constraint (ONSET↑) is ranked high, but winning candidates if it is ranked low. By positing a floating constraint, we are able to capture the difference in vowel deletion found in casual speech.
5 Glide Formation

1) Introduction

As discussed, vowel deletion in a hiatus context is crucially based on the ranking relation among the constraints requiring faithful parsing of individual features. As a consequence, the selected target of vowel deletion is a vowel whose deletion incurs the violation of relatively low-ranked $MAX-(F)$ constraints. In this sense, vowel deletion is inevitably accompanied by unfaithful parsing of certain input features.

In the light of the correspondence between input features and output features, glide formation is the most faithful way of resolving hiatus. By gliding $V_1$ of a $V_1V_2$ hiatus construction, glide formation only affects the syllabicity of a vowel, maintaining the faithful parsing of all the input features. Therefore, glide formation can be regarded as the most preferred strategy in a purely feature-sensitive hiatus-resolving mechanism like SK, without violating any $MAX-(F)$ constraint.

2) Optional Glide Formation

In most cases, glide formation in SK is an optional process. When the first vowel of a hiatus context is either high front (/i/) or a round non-low back vowel (/o,u/), a hiatus context is resolved by making $V_1$ a homorganic glide. It is only these three vowels that can glide without incurring a $MAX-(F)$ violation, given that /y/ and /w/ are the only glide phonemes in SK.
(27) a ani-o → anuo ~ anyo ‘No’
    kasi-o → kasio ~ kasyo ‘go’
    ki-o → kia ~ kya ‘crawl’
    tam-o → tamə ~ tanyə ‘commute’
    b tita → titə ~ tityə ‘finally’
    cielpap → cielpap ~ cye pap ‘steamed rice’
    kiul- → kiul- ~ kyu.l- ‘be slanted’
    c. cu-o → cuə ~ cwə ‘give’
    tu-o → tuə ~ twə ‘put’
    nu-o → nuə ~ nwə ‘discharge’
    cu-o → cuə ~ cwə ‘dance’
    po-a → poa ~ pwa. ‘see’
    s’o-a → s’oə ~ s’wa: ‘shoot’
    k’o-a → k’oə ~ kwa ‘wind’
    tuam → tuam ~ twəm ‘compost’
    puak^h → puak^h ~ pwa.k^h ‘kitchen’
    koham → koam (koham)^15~ kwa.m ‘shout’
    nue → nue ~ nwe ‘silkworm’

In order to capture the optionality of glide formation in SK, there
must be a certain phonological constraint which is ranked above the
constraint ONSET,SUFF, blocking the application of glide formation in
suffixation. If there is no other phonological restriction on the output
form with glide formation, glide formation must be an obligatory
process of hiatus resolution, since glide formation does not incur any
kind of unfaithful corresponding relation of features. What is responsi-
bles for the optionality of glide formation is a markedness constraint
on syllable structure which disfavors complex structure in a syllable.

---

15 Intervocalic /h/-deletion is a common process in SK
(28) *COMPLEX: Any complex structure in a syllable is prohibited.

As a comprehensive constraint, *COMPLEX can have an effect on every constituent of a syllable such as onset, nucleus, and coda, restricting the occurrence of an onset cluster, a diphthong, and a coda cluster, respectively. Languages, though, are different in restricting complex structure in a syllable. For instance, a language might allow an onset cluster, but not a coda cluster, or vice versa. Or a language can allow complex structure in the nucleus, but not in the margins of a syllable, or vice versa. This means that the constraint *COMPLEX can be divided into three sub-constraints such as *COMPLEX-ONSET, *NO_DIPHTHONG, and *COMPLEX-CODA. In the current analysis of SK hiatus resolution, the relevant constraint prohibiting complex structure is given in (29).

(29) *CG: The complex cluster consonant-glide is prohibited in onset position

If there is no such constraint forcing the violation of ONSET SUFF, glide formation should be an obligatory process, insensitive to the prosodic domain, as follows.

(30) /ki-a/ → [kyœ] 'crawl'

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. kiœ</td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. ki:</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. keœ</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. kyœ</td>
<td></td>
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</tbody>
</table>
However, glide formation is not an obligatory process. With the active role of the constraint $^*CG$ which outranks the constraint $ONSET_{SUFF}$, glide formation is a disfavored process in careful speech; it only optionally occurs in casual speech. Crucial to the analysis is the role of the floating constraint ($ONSET_{\rightarrow}$). In careful speech it is ranked low and the form with hiatus surfaces as in (31a). In casual speech it is ranked high, so glide formation occurs as in (31b).

(31) Optional Glide Formation

a. Careful Speech: /ki-ə/ $\rightarrow$ [kia] 'crawl'

<table>
<thead>
<tr>
<th>/ki-ə/</th>
<th>MAX-[-back]</th>
<th>MAX-[high]</th>
<th>*CG</th>
<th>ONSET SUFF</th>
<th>MAX-[+high]</th>
<th>MAX-[+back]</th>
<th>ONSET $\rightarrow$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. kiə</td>
<td>![ ]</td>
<td>![ ]</td>
<td>*</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
</tbody>
</table>

b. Casual Speech: /ki-ə/ $\rightarrow$ [kyə] 'crawl'

<table>
<thead>
<tr>
<th>/ki-ə/</th>
<th>ONSET $\rightarrow$</th>
<th>MAX-[-back]</th>
<th>MAX-[high]</th>
<th>*CG</th>
<th>ONSET SUFF</th>
<th>MAX-[+high]</th>
<th>MAX-[+back]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. kiə</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>*</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
</tbody>
</table>

3) Obligatory Glide Formation

With the ranking relation between $ONSET_{SUFF}$ and $^*CG$, glide formation in SK is optional in most cases, as discussed above. There
are, however, a few cases of obligatory glide formation which crucially depend on the specific structure of the participating stems.

By the active role of the constraint *CG, a complex structure in the position of onset is disfavored in SK in careful speech, which results in the preservation of hiatus constructions in most cases. As discussed, glide formation in SK is only possible when the constraint ONSET→ floats up in the constraint ranking system, that is, when ONSET→ dominates *CG, in casual speech. This line of reasoning implies that glide formation must occur whenever the actual output does not violate *CG, regardless of the ranking relation between *CG and the two ONSET constraints, ONSET_SUFF and ONSET→. In this case, glide formation would be an obligatory process. The relevant environment for obligatory glide formation is when an onsetless stem-final syllable (that is, a pure V1 of /I/, /u/ or /o/) is concatenated with a vowel-initial suffix, as in the following data in (32).

(32) a. ə-a → wa *əa ‘come’
    s'au-ə → s'awə *s'auə ‘fight’
    peu-ə → pəwə *peuə ‘learn’
    keu-ə → kəwə *keuə ‘vomit’
    ceu-ə → cəwə *ceuə ‘put to sleep’
    b 1-ə → yə *iə (?) ‘tile over’
    moi-ə → moyə *moiə ‘gather’
    kori-ə → kɔrə *koliə ‘be stagnant’
    poiə → pɔiə *poiə ‘be seen’
    coi-ə → coyə *coiə ‘be tightened’

The form with glide formation is the actual output in this case, since it does not violate either *CG unlike the case of optional glide
formation or any of the MAX-(F) constraints. As a consequence, obligatory glide formation can be predicted in the ranking system as follows.

\[(33) \ /o-a/ \rightarrow [wa] \ 'come' \]

<table>
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</thead>
<tbody>
<tr>
<td>a. o.a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. wa</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>c. o</td>
<td>*!</td>
<td></td>
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<td>*</td>
</tr>
<tr>
<td>d. a</td>
<td>*!</td>
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</tbody>
</table>

6. Linked Structure and Obligatory Vowel Deletion

Related to the process of glide formation, there is an interesting case of vowel deletion which needs a more careful observation. As the data in (34) show, a certain set of stems displays obligatory vowel deletion, even though the segmental environment seems to require optional glide formation as in (27).

\[(34) \begin{align*} 
  ci{-}\o & \rightarrow \ c\o (*cy\o, *ci\o) \quad 'fall, lose, shoulder' \\
  c'\i{-}\o & \rightarrow \ c'\o \quad (*c'y\o, *c'i\o) \quad 'steam' \\
  c'h{-}\o & \rightarrow \ c'h\o \quad (*c'h'y\o, *c'h'i\o) \quad 'hit' 
\end{align*} \]

The key point of the data in (34), compared with those of optional glide formation in (27), is that the onsets of the stems are palatal. For the account of this unique aspect of the palatal stems, I posit a linked structure in their underlying representation which reflects a
diachronic process. Specifically, the palatal stems in (34) have experienced diachronic palatalization\(^{16}\) which also occurred in the stem-internal position from the late 17\(^{th}\) to the early 18\(^{th}\) century.

(35) Diachronic Palatalization

<table>
<thead>
<tr>
<th>MK</th>
<th>palatalization</th>
<th>SK</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>ti-</td>
<td>&gt;</td>
<td>ci-</td>
<td>'lose, fall, shoulder'</td>
</tr>
<tr>
<td>pti-(^{17})</td>
<td>&gt;</td>
<td>c'1-</td>
<td>'steam'</td>
</tr>
<tr>
<td>t'1-</td>
<td>&gt;</td>
<td>c'h1-</td>
<td>'hit'</td>
</tr>
</tbody>
</table>

What is assumed here in the present analysis is that those palatal stems still reflect the effect of diachronic palatalization with their unique linked structure in which the consonant and the vowel share the feature [palatal] ([i-back]).

---

16. Synchronically, palatalization is no longer active stem-internally Therefore, the following stems which were free from the application of the diachronic stem-internal palatalization still retain coronal onsets, since they were not followed by palatal-triggering /l/, but by diphthongs such as /\i/ry, /\i/ at that time

<table>
<thead>
<tr>
<th>MK</th>
<th>&gt;</th>
<th>SK</th>
<th>(MK = Late Middle Korean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>t\i\i\i\i</td>
<td>&gt;</td>
<td>tti\i</td>
<td>'finally'</td>
</tr>
<tr>
<td>t\i\i\i-</td>
<td>&gt;</td>
<td>tti\i-</td>
<td>'step on'</td>
</tr>
<tr>
<td>ky\a\a\a\k</td>
<td>&gt;</td>
<td>ky\a\a\k</td>
<td>'bear'</td>
</tr>
<tr>
<td>mad\a\y</td>
<td>&gt;</td>
<td>mad\i</td>
<td>'node'</td>
</tr>
</tbody>
</table>

In SK, synchronic palatalization is only possible in the limited cases of suffixation

<table>
<thead>
<tr>
<th>pat\b-</th>
<th>-&gt;</th>
<th>pac\b</th>
<th>'field (nominative)'</th>
</tr>
</thead>
<tbody>
<tr>
<td>he\a\o\t\l-</td>
<td>-&gt;</td>
<td>he\a\o\t\c</td>
<td>'sunrise (nominalization)'</td>
</tr>
</tbody>
</table>

17 In MK, a consonant cluster like /pt/ was allowed, which changed into /t'/ later (K-M Lee 1972)
The main implication of the linked structure of palatal stems is that the hiatus-resolving vowel deletion does not invoke the violation of the highly-ranked constraint MAX-[back]. In the deletion of the vowel [i], only the non-linked feature [+high] actually deletes. However, the original shared feature [-back] is still retained by the palatal consonant.

Such assumption of the linked structure of palatal stems can succinctly account for why vowel deletion is a favored process over either glide formation or hiatus retention. Vowel deletion in this linked structure only invokes the violation of MAX-[+high], satisfying the dominant constraints such as *CG and ONSET\text{SUFF}.

---

18 The feature geometrical model of Clements and Hume (1995) may best clarify such featural interaction between a consonant and a vowel, where consonants and vowels have the same features such as [labial], [coronal], and [dorsal] but vowels are represented under the vocalic node which is dominated by the C-place (Consonant place) node. In this model, the relevant feature of palatalization is [-anterior]. For the easier understanding of the featural structure which is not a main issue of the present study, the feature [-back] is used for the description of palatalization.
(38) /ci-a/ → [cə] 'lose, fall, shoulder'

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<tbody>
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<td>a. ciə</td>
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<td></td>
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<tr>
<td>b. cvə</td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. ceə</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>d. ci</td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Supporting the linked structure analysis, SK provides another interesting instance of the linked structure produced by a diachronic process, as follows.

(39) pʰu-a → pʰə (*pʰwə, *pʰu.a) 'drain'

The situation is exactly identical to the case of palatal stems. Vowel deletion is the proper process of hiatus resolution in this case over either optional glide formation or hiatus retention which are expected as in (27). Here again, a linked structure which reflects a diachronic process can be assumed. The relevant diachronic process in this case is labialization where the vowel /i/ is changed to /u/ by the preceding labial consonant.

(40) MK Labialization SK Gloss

<table>
<thead>
<tr>
<th>MK</th>
<th>Labialization</th>
<th>SK</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>mil</td>
<td>&gt;</td>
<td>mul</td>
<td>'water'</td>
</tr>
<tr>
<td>mil-</td>
<td>&gt;</td>
<td>mul-</td>
<td>'bite'</td>
</tr>
<tr>
<td>pil</td>
<td>&gt;</td>
<td>pul</td>
<td>'fire'</td>
</tr>
<tr>
<td>pili-</td>
<td>&gt;</td>
<td>puli-</td>
<td>'call'</td>
</tr>
<tr>
<td>pʰil</td>
<td>&gt;</td>
<td>pʰul</td>
<td>'grass'</td>
</tr>
</tbody>
</table>

The diachronic labialization\(^1\) induced the stem /pʰu-/ to have a
linked structure where the vowel shares the feature [round] ([labial]) with the preceding labial consonant.

\[
\begin{array}{c}
\text{[round]} \\
\text{p}^\text{h} \\
\text{u}
\end{array}
\]

With such a linked structure, the deletion of the vowel /u/ is accompanied only by the deletion of the features such as [+high] and [+back], but not by [round]. This is why vowel deletion is also the favored process over glide formation and hiatus retention, in this case.

\[
\text{(42) } /p^h u-\text{要素} \rightarrow [p^h \text{要素}] \text{'drain'}
\]

<table>
<thead>
<tr>
<th>/p^h u-要素</th>
<th>MAX-[-high]</th>
<th>*CG</th>
<th>MAX-[round]</th>
<th>ONSET</th>
<th>MAX-[+high]</th>
<th>MAX-[+back]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. p^h u.要素</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
</tr>
<tr>
<td>b. p^h w要素</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
</tr>
<tr>
<td>c. p^h 要素</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
</tr>
<tr>
<td>d. p^h u要素</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
<td>*!</td>
</tr>
</tbody>
</table>

19. Labialization is an optional process in the synchronic phonology of SK, which occurs in either some stems with the vowel /i/ or in second language (L2) acquisition, more prominently.

| a. kip‘ि- | → | kip‘ि- | ~ | kip‘u- | ‘be happy’ |
| nap‘ि- | → | nap‘ि- | ~ | nap‘u- | ‘be bad’ |
| yep‘ि- | → | yep‘ि- | ~ | yep‘u- | ‘be pretty’ |
| pap‘ि- | → | pap‘ि- | ~ | pap‘u- | ‘be busy’ |
| silп‘ि- | → | silп‘ि- | ~ | silп‘u- | ‘be sad’ |
| b. pillу | → | pillу | ~ | pullу | ‘blue’ |
| pilluminton | → | pilluminton | ~ | pulluminton | ‘Bloomington’ |
| p’ıransi | → | p’ıransi | ~ | p’ıransi | ‘France’ |
Since the shared feature [round] is still retained by the consonant after /u/-deletion, candidate (c) with vowel deletion always best satisfies the constraint system over other candidates.

8) Summary and Concluding Remarks

Adjacent heterosyllabic vowel sequences which are cross-linguistically disfavored are resolved by a variety of phonological processes in SK such as vowel deletion, glide formation, glide insertion, and coalescence, motivated by the undesirability of onsetless syllables. Unlike many languages where both positional and featural properties of hiatic vowels are responsible for the aspects of hiatus resolution, SK adopts a purely feature-sensitive mechanism of hiatus resolution in which faithfulness of featural correspondence plays a decisive role, except in a certain limited cases.

A certain group of stems with palatal or labial onsets in SK displays a unique obligatory vowel deletion as a hiatus-resolving process in the environment where optional glide formation or hiatus retention is expected. The linked structure of those stems, reflecting diachronic processes such as palatalization and labialization, insures the satisfaction of highly-ranked MAX-(F) constraints like MAX-[back] and MAX-[round], since the shared features such as [-back] and [round] are still retained by the linked consonant even after vowel deletion.
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