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Hetero-syllabic split L-Geminates: English in Singapore and Hong Kong

Lian Hee Wee
Hong Kong Baptist University, lianhee@hkbu.edu.hk

Citation

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Wee, Lian Hee
Hong Kong Baptist University
lianhee@hkbu.edu.hk

Abstract

Drawing upon data from Singapore English (SgE) and Hong Kong English (HKE), this paper demonstrates that coda /l/ geminates and splits into [-wl-] when sandwiched between a short vowel and another vowel. This split-gemination of /l/ is problematic for the currently established conception that geminates share phonological features. To solve this problem, this paper proposes that non-terminal nodes contain phonological information via correspondences to the terminal nodes.

Keywords: Inter-tier Correspondence, L-Gemination, English, Singapore, Hong Kong,

1. Introduction

This paper explores the case of the split gemination of /l/ in Singapore English (SgE) and Hong Kong English (HKE). It is difficult to demonstrate split gemination (X → $X_i X_j$) because there are after all two distinct consonants. In fact, "split gemination" is an oxymoron given that gemination means doubling.

A good place to begin would be to demonstrate gemination. Both SgE and HKE alike show consonantal gemination in the environment V_{short} __ +V, i.e. a consonant that is preceded by a short vowel geminates when a vowel-initial suffix is attached, shown in (1). Otherwise there is no gemination, shown in (2).

(1)   Root-final Consonant Geminates (SgE and HKE alike)
a. i. [stɔp] "stop" ii. [stɔppiŋ] "stopping"
b. i. [put] "put" ii. [puttiŋ] "putting"

(2)   Final Consonant Non-Geminates
a. i. [weit] "wait" ii. [weitiŋ] "waiting"
b. i. [paip] "pipe" ii. [paipiŋ] "piping"

The case in (1) is not unique to SgE and HKE. Such hetero-syllabic gemination is also found in Standard English (Hammond 1997). The words in (2) do not apply to SgE because in SgE, these words have short vowels. The standard analysis for such gemination is that the V-initial suffix desires an Onset (triggered by the universal ONSET constraint) while the preceding syllable desires bimoraicity that can only be satisfied if a
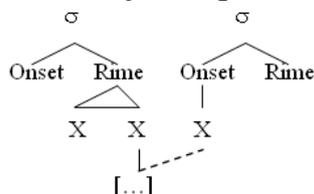
short vowel is either followed by a coda consonant or else the vowel must under go compensatory lengthening (Hayes 1989). In any case, gemination in (1) is understood as spreading, presented in (3).

(3)   Onset-triggered Consonant Spreading

Given (3), it becomes clear that to show that in SgE or HKE a consonant C splits in gemination if in the environment V_{short} __ +V, the singular C surfaces as two distinct segments. Such a split is problematic for a representation like (3).[2]

In (3), the two Xs are linked to the same melody and hence cannot be distinct, contrary to what is needed for a split in the gemination. Split gemination is thus problematic for any theory that is based on such a representation. This paper proposes a possible way out of this problem.

Demonstrating that split-gemination exists is not the only difficulty. New Englishes such as SgE and HKE are hard to define since they typically range from basilectal varieties to acrolectal ones. Also, there are usually many languages involved. SgE for example, is variously considered to have been the combined influences of Standard English, Malay and various Chinese languages (Platt 1975; Lim 1996; Bao and Wee 1999; Goh 2002; Ng 2004; Bao and Hong 2006 among many others). In the investigation of new Englishes, one should be wary of making unqualified assumptions that any English-sounding item would automatically correspond with the English source (Mohanan 1992). For example, unless supported by evidence, it is imprudent to assume that "help" pronounced [heup] in SgE is underlyingly identical to RP /help/; it could have been /heup/ in SgE.

For current purposes, it is unnecessary to define SgE or HKE beyond the loose sense of what any familiar listener can identify as English spoken in Singapore or Hong Kong. The SgE and HKE data reported here comes from the author's field research in the two cities, mostly over the last 2 years. For the most part, the investigator situates himself in some inconspicuous spot and make notes of what he hears in real everyday life speech of a large number of people. From these notes, a set of test words is constructed for data solicitation from willing informants of both genders, within the 18-35 age range. In so doing, the author presents only the notable and consistent features of the languages investigated.

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[2] One way to avoid such a split is to think of it as phonological fission of /l/ which has two parts: an underlying [dorsal] feature and a [lateral] feature (for phonetic evidence, see Sproat and Fujimura 1993). However, the fission account falsely predicts that [-wl-] should appear in when CV prefixes to L-initial stems. Consonants at stem-initial positions do not geminate when CV is prefixed, but if [-wl-] is treated as fission, one would not have any devices left to prevent such [-wl-] from surfacing stem-initially. In short, though /l/ may have a [dorsal] feature, it must be treated like all other consonants in terms of where [-wl-] occurs, making the fission account unviable.

Section 2 demonstrates that split-gemination does occur in HKE and SgE, with respect to /l/. Section 3 provides a theoretical framework within which a solution is formulated in section 4. Section 5 concludes the paper.

2. From coda /l/ to split-L in SgE and HKE

This section lays out the context within which one can see that /l/ in SgE and HKE undergoes hetero-syllabic split gemination. To begin, it is noteworthy that /l/ vocalizes in the coda, exemplified here with some data from Hong Kong English (HKE).

(4)　　/l/ → [w] / ($_{coda}$ __)
　　　a.　i.　[smaiw]　　"smile"　　ii.　[smailiŋ]　　"smiling"
　　　b.　i.　[peiw]　　　"pale"　　　ii.　[peiliʃ]　　　"palish"

This situation is also found in Malaysian, Estuary (Alterndorf 2003) and Adelaide Englishes (Borowsky 2001). The case for /l/ vocalization in modern SgE is less straightforward, though hints may be found in words like "help", "milk", "feel", etc where the Standard English variety has /l/ in coda In all these words, the SgE pronounces the <l> as [w]. To see /l/ vocalization in SgE, consider pairs like "smile~smiling", "feel~feeling" and their SgE variations.

(5)　　Two dialects in SgE

		SgE		Dialect A	Dialect B
a.	smile	[smaw]	smiling	[smaw.liŋ]	[sma:.liŋ]
b.	feel	[fiw]	feeling	[fiw.liŋ]	[fi:.liŋ]

One obvious difference between SgE and HKE is that in SgE words, the number of segments in the rime is limited to two, whereas HKE would allow up to three as in HKE [smaiw]. The two-segment limit of SgE is true only for words where /l/ is involved morpheme-finally (in (2) for example, SgE would allow tri-segmental rimes). What one sees here is that there is a match between the number of morae and the number of segments for cases where there is a final /l/, (6).

(6)　　Mora-Segment Match in SgE Rime involving final /l/
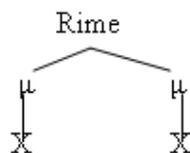
HKE does not adhere to (6) strictly since "smile" is [smaiw] where there are three segments in the time. However, (6) does have an impact on HKE as can be seen in the syllabification of "smiling" in HKE as [smai.liŋ] where the initial syllable no longer contains the [w]. Such an effect is easily accounted for in an Optimality Theoretic framework where the unmarked Mora-Segment Match emerges differently depending

on how it is ranked with respect to faithfulness (for this characteristic of OT, see McCarthy and Prince 1994).

Returning to (5), Dialects A and B are similar in unsuffixed forms, but differ when a vowel-initial is attached. In Dialect B one can see the [w~l] alternation, similar to HKE in (4) except for compensatory lengthening of the vowel in the root. So, it is reasonable to assume that an account for Dialect B would be along the following lines.

(7)   Derivation in Dialect B

		/fil/	/fil + iŋ/
Step 1	Syllabification	fil	fi.liŋ
Step 2	Compensatory lengthening	-	fi:.liŋ
Step 3	L-vocalization	fiw	-
	Output	[fiw]	[fi:liŋ]

Technically, it isn't so obvious if Steps 2 and 3 are to be ordered, but this is immaterial for the present discussion. In any case, it should be clear that Compensatory lengthening in Step 2 is motivated by demands for the syllable to be bimoraic.

Given this derivation, Dialect B speakers are also likely to take the words in (1) and produce them with vowel lengthening rather than with consonant gemination. This much seems to be supported by my observations, though more reliable statistics would require extensive investigation. Circumstantial evidence thus suggests that for the speaker of Dialect A, the underlying form would have a final /l/ without any preceding /w/. This is also supported by my field observations that many such speakers actually believed they have pronounced an [l] rather than a [w] as the final segment in "bill", and that the pronunciation is different from that in "beau". In fact, SgE speakers pronounce both words identically as [biw]. It is only when asked to compare the two utterances that most speakers eventually notice the similarity.[3]

If the explanation given in the preceding paragraphs is correct, then "smile" has moved from RP /smail/ to SgE /smal/ by virtue of (6), and by virtue of the alternation rule in (4) /l/ → [w] to yield SgE "smile" as [smaw]. A picture on the correspondence between the UR forms of RP rimes and the UR forms SgE rimes is provided in (8).[4]

(8)   UR of SgE rimes and RP sources

Rime RP source	Rime SgE (UR)	Example
/VC/	/VC/	"bill"
/VVC/	/VVC/	"pipe", "wait", "line"
/V:C/	/VC/	"beat", "peep"
/VVL/	/VL/	"feel", "smile"

Though (8) is not directly relevant to our understanding of hetero-syllabic split-gemination, the systematicity of the correspondence between RP and SgE (probably a

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[3] It is possible to do this because almost all Singaporeans learnt English in school and can spell. Though the effect could have come from influence of "spelling", the point nonetheless remains.
[4] For simplicity, I have deliberately left out discussions on coda consonant clusters in words like "last". Such words do not participate in hetero-syllabic gemination anyway.

kind of historical change) shows that SgE patterns exactly like HKE with respect to gemination given the right UR forms.

Like HKE, SgE words with coda /l/ would vocalize into [w] when parsed into the coda. If one recalls the data in (4), one can similarly conclude that [l] and [w] are allophones in HKE at least for words like "smile". If one further recalls the patterns of hetero-syllabic gemination of consonants in (1), things get interesting. The logical conclusion must be that the words in (9) below must contain a split geminate /l/.

(9)　　Split-L Gemination (SgE and HKE alike)
　　　　a.　i.　[piw]　"peel"　ii.　[piwliŋ]　"peeling"
　　　　b.　i.　[hɛw]　"hell"　ii.　[hɛwliʃ]　"hellish"
　　　　c.　i.　[kaw]　"cull"　ii.　[kaw.liŋ]　"culling"

The split gemination of /l/ can be understood derivationally as in (10).

(10)　　Comparing the Morpheme-final L with Morpheme-final C
　　　　/stɔp+iŋ/　→　stɔp.piŋ
　　　　/fil+iŋ/　→　fil+liŋ　→　　fiw.liŋ
　　　　　　　　gemination　　*L-voc*

The split-L geminate challenges the standard conception of spreading where two segments are associated to the same set of features. For /l/ to be both [l] and [w] at the same time is paradoxical.
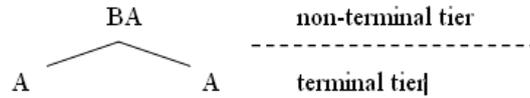
3.　Inter-tier Correspondence Theory

The split-L paradox can in fact be resolved if one takes phonological outputs as structural representations that allow for content information to percolate across nodes via correspondence, (11).

(11)　　Inter-tier Correspondence Theory (Wee 2004; Orgun 1996)
　　　　i.　Carriage of information
　　　　　　All nodes (terminal or non-terminal) are information-bearing.
　　　　ii.　Correspondence of information
　　　　　　There is a correspondence of the information content between nodes that stand in immediate domination.
　　　　iii.　Violability of correspondence
　　　　　　Correspondence of information between nodes is not necessarily perfect.

With the setup in (11), the Inter-tier Correspondence Theory (ICT) stands phonological representations on their heads in that terminal nodes are now exactly identical to underlying (input) strings. What is traditionally construed as the phonetic output is now the entire representation with the root node looking identical to the traditional notion of surface strings. To illustrate consider a hypothetical language where /A+A/ → [BA]. In ICT, this would be represented as (12):
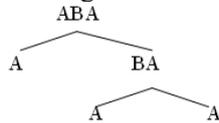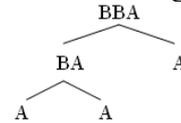
(12)

```
                        BA              non-terminal tier
                       /  \             - - - - - - - - - - - - - - - - - -
                  A         A           terminal tier|
```

As can be seen in (12), it is the constituency of two adjacent A-s that triggers the "unfaithful" correspondence at the root node. To get the effect in (12), a constraint that favors preservation of information from the right branch would suffice. This can be easily done with positional faithfulness constraints and general faithfulness constraints. The power of ICT can be further illustrated with ternary strings using an additional rule CB → CD, the examples in (13) should suffice:
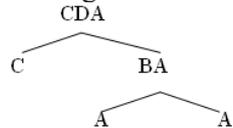
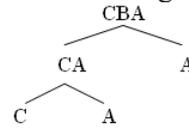(13)   ICT with reference to Rule-ordering Effects[5]

a. Bleeding
```
            ABA
           /   \
          A     BA
               /  \
              A    A
```

b. Counterbleeding
```
            BBA
           /   \
          BA    A
         /  \
        A    A
```

c. Feeding
```
            CDA
           /   \
          C     BA
               /  \
              A    A
```

d. Counterfeeding
```
            CBA
           /   \
          CA    A
         /  \
        C    A
```

It should be clear from (13) that ICT captures directly the insight that opacity (and for that matter, effects of derivation) is often structurally motivated, something that was built into the levels of Lexical Phonology or the mechanisms of bracket erasures (Mohanan 1986). It further predicts that depending on whether the left-branch or the right-branch is more stable, opaque and transparent derivational effects simply fall out of the way the structure branches. Strictly speaking, there is no derivation in ICT since it is the entire structure and the correspondences of information across nodes that matters, but it would produce effects that pre-OT phonological analyses have described as derivational.

4. Account for Split-L Gemination

If one accepts the stipulations of ICT, then split-L can simply be represented as (14) where the given input is /CVL+VX/:

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[5] The same effects can be achieved with a progressive rule AA→AB coupled with the mirror-images of these structures.

(14)   Representing the Split-L in ICT

```
CVw           LVX              Root tier
    \          /\            -------------------
     Vw     L   VX            Intermediate tier(s)
      /\     \   /\           -------------------
C    V   L    V   X           Terminal tier
```
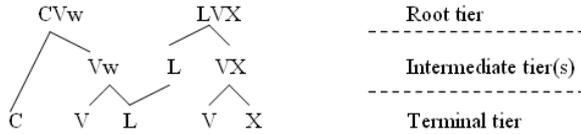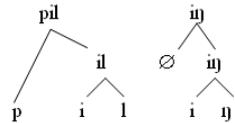
Following ICT, the terminal tier in (14) is identical to the input string /CVL+VX/. This string is then parsed into a structure equivalent to two syllables such that the "L" is doubly associated. Because information corresponds across nodes, higher nodes reconstruct the information of the lower nodes. In (14), there is one unfaithful correspondence: L to [w] in the coda of the first syllable. This unfaithful correspondence is triggered by a constraint that prohibits [l] in the coda of a syllable, which would yield the effect of split gemination.

To see how ICT works, consider first a set of possible candidates when given an input such as /pil+iŋ/ "peeling" and /meil+iŋ/ "mailing".

(15)   Candidates for /pil+iŋ/ "peeling"
a. Faithful   b. Vocalize

```
   pil           iŋ              piw           iŋ
     \    il   ∅   iŋ              \    iw   ∅   iŋ
      \  /\       /\               \  /\       /\
  p    i  l     i   ŋ         p    i  l     i   ŋ
```
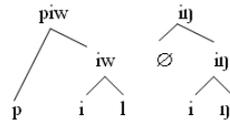
c. Geminate   d. Geminate and Vocalize

```
   pil           liŋ             piw           liŋ
     \    il   l   iŋ              \    iw   l   iŋ
      \  /\  \   /\                \  /\  \   /\
  p    i  l    i   ŋ          p    i  l    i   ŋ
```
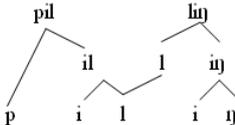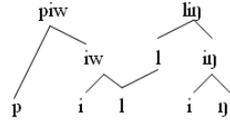
e. Vocalized Geminates

```
   piw           wiŋ
     \    iw   w   iŋ
      \  /\  \   /\
  p    i  l    i   ŋ
```

- 1118 -
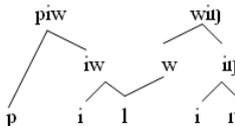
(16)   Candidates for /meil+iŋ/ "mailing" (HKE only)

a. Faithful

```
      meil              iŋ
     /  \              /  \
    eil   ∅          iŋ
   / \              / \
  m  e  i  l      i  ŋ
```

b. Vocalize

```
      meiw              iŋ
     /  \              /  \
    eiw   ∅          iŋ
   / \              / \
  m  e  i  l      i  ŋ
```

c. Resyllabified

```
      mei               liŋ
     /  \              /  \
    ei               iŋ
   / \              / \
  m  e  i  l      i  ŋ
```

d. Geminate and Vocalize

```
      meiw              liŋ
     /  \              /  \
    iw    l          iŋ
   / \              / \
  m  e  i  l      i  ŋ
```

e. Vocalized geminate

```
      meiw              wiŋ
     /  \              /  \
    iw    w          iŋ
   / \              / \
  m  e  i  l      i  ŋ
```
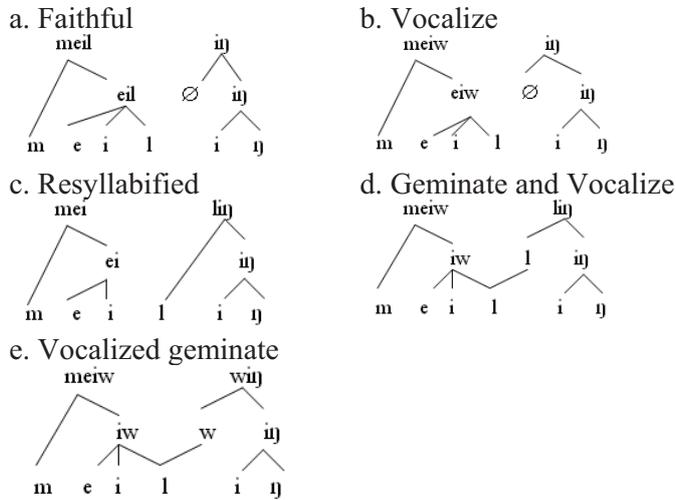
The above is only a subset of all possible candidates, but that should suffice to illustrate how ICT would correctly predict the split-L gemination. The above candidates vary along various parameters: (i) where the final L is syllabified; (ii) if that L is geminate; and (iii) if correspondent of the L is faithful.

Armed now with the set of candidates, one can evaluate each candidate with respect to the constraints in OT tableaux in (17).

(17)   ICT account of Split-L[6]

*MULT ASSOC

A node cannot be dominated by more than one node.

INTER-TIER FAITH[7]

Dominating nodes must have identical information with subordinate nodes.

*L-CODA[8]

[l] is not allowed in the coda.

BI-RIME[9]

The rime contains exactly 2 segments

ONSET

All syllables have onsets.

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[6]Doug Pulleyblank (p.c.) suggests a classical OT solution where input /l_i/ has two correspondences [w_i] and [l_i]. This predicts languages that allow long distance split correspondence /X_j/ corresponds to [Y_j…. Z_j] by virtue of GEN's capacity, which as far as I know are unattested. ICT restricts such split correspondence to adjacency because cross-branching structures are impossible to GEN. Also, multiple correspondences require different IDENT to apply to each correspondent. These IDENT constraints would have to be positional in nature, which is the insight of ICT. So, while the split correspondence approach could in principle generate the L-voc effects, it overgenerates.

[7] This is really a collection of constraints akin to classical Faithfulness.

[8] Whether or not this is universal is immaterial here, but across languages [l] is often vocalized when in the rime.

[9] BI-RIME is most likely the effect of two constraints involving (i) the birmoraicity of the syllable which is the minimal phonological word and (ii) the biuniqueness correspondence of the mora and the segment.

/pil + iŋ/	*L-CODA	ONSET	*MULT ASSOC	INTER-TIER FAITH
a. Faithful	*!	*		
b. Vocalize		*!		*
c. Geminate	*!		*	
☞d. Gem & Voc			*	*
e. Voc'd gem			*	**!

/meil + iŋ/ (HKE only)[10]	*L-CODA	ONSET	BI-RIME	*MULT ASSOC	INTER-TIER FAITH
a. Faithful	*!	*	*		
b. Vocalize		*!			*
☞c. Resyllabified					
d. Gem & Voc			*!	*	*
e. Voc'd gem				*!	**

Violation counts in the above tableaux are obtained by evaluating each representation candidate at every node against the constraints. For example, in the faithful candidates (a), /l/ is kept as it is in the corresponding higher tier which constitutes a violation of *L-CODA at that level. It is important to bear in mind that in ICT representations, adjacency and constituency are clearly different. When the /l/ is at the terminal tier, there is no indication of it being in the coda. That information is only available in the dominating tier when /l/ and the preceding vowel form a constituent.

As may be seen in (17), vocalization is only triggered when /l/ is syllabified into the coda.[11] (Recall that hetero-syllabic gemination is due to the need for syllables to have onsets and to the requirement that HKE and SgE rimes must be bimoraic). This explains why /meil+iŋ/ in HKE does not have split-L gemination, but /pil+iŋ/ does for both SgE and HKE. Of crucial importance here is the possibility of "unfaithful" inter-tier correspondence because it is this that allows for the same /l/ to surface differently according to its context (i.e. onset or coda positions).

5. Conclusion and Implication

Despite its success in resolving the paradox in split gemination, ICT stand phonological outputs on their heads since information at the terminal tiers would now be identical to the input strings, while the strings at the root node(s) would match the phonetic outputs. However, ICT derives for us the effect that depth of derivations is directly proportionate to depth of structural embeddings (cf. (13)). Further, it captures the insight that

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[10] The UR for "mail" in SgE is very likely to be /mel/, which surfaces as [meu].

[11] Donca Steriade (p.c.) pointed out that in attributing the geminate and vocalization combination to resyllabification, there must be either (i) no morpheme-internal geminates in words like *silly*, *vanilla* or *dilly-dally* or (ii) these geminates, which do not stem from resyllabification, function differently. In SgE and HKE, *silly* is [si:li:], *vanilla* [wan.lei.la:] and *dilly dally* [di:.li:.dɛ:.li:].

phonological alternations can only be triggered by constituency and not mere adjacency. These two observations have always been taken implicitly. When put this way, the representations generated by ICT are perhaps not as weird as may seem at first blush. In fact, they offer us new possibilities for exploring derivational effects (in particular opaque ones) that plagued much of modern OT.

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