Intervocalic Devoicing in Kiput and Berawan Dialects

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Introduction

- Is sound change unconstrained?
- Does sound change follow phonetic naturalness?
Introduction

- Intervocalic (or postvocalic) **voicing** is common

  \[ T > D / V(V) \]

- The most frequent type of lenition (alongside spirantization, approximatization and others)

  Kaplan (2010)

- 26 of 153 languages have intervocalic lenition

Phonetics and phonology

- Good phonetic rationale

- **Passive voicing**: voicing into closure of intervocalic voiceless stops (e.g. German)  
  Jessen (1998)

- Perception  
  Kaplan (2010)

- P-map: minimal change to achieve phonotactics: $T \rightarrow D$  
  Steriade (2010)
Sound change

- Very common sound change
- Reported in over 40 languages

Kümmel (2007)

Intervocalic voicing is a universal **phonetic tendency**.
Intervocalic *devoicing*

- Intervocalic *devoicing* is the opposite process
  \[ D > T / V_\_ (V) \]
- **Unattested** as a synchronic phonological process
- It would operate against the universal phonetic tendency of voicing intervocalic voiceless stops
- P-map: spirantization is perceptually less salient than devoicing in intervocalic position
  
  Steriade (2001), Kaplan (2010)
Sound change

- Can sound change operate against universal phonetic tendency?
- Is synchronic grammar more constrained than sound change?
Sound change

- Sound change $D \rightarrow T / V\_\_\_V$ reported for Kiput and the Berawan dialects of the Malayo-Polynesian (North-Sarawakan) group
All data from Blust (1992, 2005, 2013)

- **g > k / V__V**
  - *agem > akiem
  - *pager > pakel
  - *tugal > tukin

- **j̄, y > c̄ / V__V**
  - *puj̄ut > puc̄ut
  - *kayu > kač̄ew
  - *lia > lač̄ih

- **w (> v) > f / V__V**
  - *jaway > dafiyə
  - *pawat > pafiet
  - *Ruab > lufiəp
Labials and alveolars do not undergo devoicing:

- *babuy > babuy
- *ŋadan > adin

Loanwords often undergo devoicing

<table>
<thead>
<tr>
<th>Malay</th>
<th>Kiput</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>harga</td>
<td>ləkih</td>
<td>‘price, cost’</td>
</tr>
<tr>
<td>bujan</td>
<td>bucciə</td>
<td>‘bachelor’</td>
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<tr>
<td>kerja</td>
<td>kələcciə</td>
<td>‘work’</td>
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Kiput

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## Kiput

- \( \hat{\text{jj}} \rightarrow d / \# \_ \)
- \( \hat{j} \text{janiq} \rightarrow \text{danai?} \)
- \( \hat{j} \text{jalan} \rightarrow \text{dalaan} \)
- \( \hat{j} \text{away} \rightarrow \text{dafiey} \)
Berawan dialects

- In Berawan dialects labials and velars undergo devoicing, as reported in Blust (2013).
- Best examples from Long Terawan, Long Jegan.
- Labials additionally change place of articulation (but only intervocalically!)
Berawan dialects

- **g** (from **R**) > **k** / V_\_V
  - *begas* > bɔkəh ‘husked rice’
  - *begat* > bɔkəʔ ‘heavy’
  - *kagaw* > kikiw ‘scratch an itch’

- **b** > **k** / V_\_V
  - *babuy* > bikuy ‘pig’
  - *bubu* > bukkəw ‘trap’
  - *qabu* > akkuh ‘ash’
  - *gibu* > gikkuh ‘thousand’
Berawan dialects

Long Terawan

- Word-initially, stops remain voiced
  - *babuy > bikuy ‘pig’
  - *gibu > gikkuh ‘thousand’
Crucial problem

- \( *b > k / V__V \)

**Scenario 1**  
1. \( b > p \)  
2. \( p > k \)

**Scenario 2**  
1. \( b > g \)  
2. \( g > k \)

- Problem: if devoicing occurs before change of place, why no change of the original \( *p \)?
  
  *hapuy > apuy, not **akuy

- If change of place first, why only word-initially?
Berawan dialects (Blust 2005)

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Sound change

- Alveolar series of stops does not devoice
- Intervocally d lenites to r
- $d \rightarrow r$ / V__V
  *daʔun > dion
  *tudug > turo
Blust (2005: 243)

“Devoicing affected a single feature value. There is thus no possibility of considering a concatenation of natural changes which cumulatively produced an unnatural result.”

If intervocalic voicing (IVV) is assimilation, then intervocalic devoicing (IVD) is dissimilation?
Explanations in the literature

1. Dissimilation is not explanatory, but simple restating that IVD is the opposite of IVV
   → Also voice unlikely to assimilate (Blust 2005)

2. Hypercorrection in Ohala’s (1981, 1993) terms?
   → Why only g, ŋ, and v in Kiput, but b and g in Berawan?
   → Why lenition in d?

3. IVD is natural? Strengthening of onsets
   → Why not word-initially?
   → Why asymmetries?
A new explanation

- Can sound change operate against universal phonetic tendency?
- A new explanation:
  - Explain asymmetry: $g, \breve{j}, v$ vs. $b, d$
  - Explain lenition in $d$

$\Rightarrow$ Combination of sound changes?
The data revisited

- Let’s reexamine the data
The data revisited

- Long Terawan

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- Kiput

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Complementary distribution

- **Complementary distribution**
  d lenites to r, stays voiced stop initially
- Can we assume the same for b and g?

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<td>b &gt; β / V__V</td>
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<td>d &gt; ō / V__V</td>
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<td>g &gt; γ / V__V</td>
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Next step: £ > r
Also: β > γ
Sound change

- **Unconditioned devoicing** of voiceless fricatives? Voice is difficult to maintain: voiced fricatives dispreffered.
- Unconditioned devoicing is a **very common and phonetically motivated sound change**.
- Most importantly: it happens in Kiput as well
  \[ v > f \]

Because voiced fricatives surface only intervocalically, we get apparent, but not actual IVD.
Sound change

- IVD did not operate as a sound change
- A set of sound changes occurred: intervocalic lenition of voiced stops to voiced fricatives, unconditioned devoicing of voiced fricatives, occlusion to stops
- Schematically:

1. \( D \rightarrow Z / V V \)
2. \( Z \rightarrow S \)
3. \( S \rightarrow T \)

\( \text{babuy} \rightarrow \text{ba\textbetauy} \rightarrow \text{bayuy} \rightarrow \text{baxuy} \rightarrow \text{bakuy} \)
Advantages of the new proposal

- What are the advantages?
- Explains why d lenites to r and does not devoice: r is not a fricative
- Explains why b devoices to k
  $\beta > \gamma$ much more motivated and natural than $b > g$
- No problems with chronology: in fact $b > k$ suggests another stage in the development
- All sound changes assumed are natural, phonetically well-motivated and well attested
## Complementary distribution

### Kiput

- The same explanation for Kiput

- Traces of complementary distribution
  \[ *:\dd > d \]
  
  \[
  \begin{array}{ccc}
  \# & V & V \\
  *:\dd & d & \hat{\hat{c}}
  \end{array}
  \]

- Not rare: in the Sursilvan dialect of Romansh \( \dd \dd > \dd \) / \#__
  Kümmel (2007: 73)

- Same for \( g \): \( g > \gamma / V__V \), but not for labials and dentals

- It is not uncommon for only \( g \) to spirantize
Kiput

- **Unconditioned devoicing** of voiced fricatives and affricates
  
  \[ v \rightarrow f \]
  
  \[ y \rightarrow x \]
  
  \[ ķ \rightarrow ģ \]

- Natural and common sound change

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The model

- I propose a model for explaining such seemingly unnatural system (Beguš 2015):
  
  (a) a set of segments enters complementary distribution;
  (b) a sound change occurs that operates on the (un)changed subset of those segments;
  (c) optionally, another sound change occurs that blurs the original complementary distribution.
Other cases

- Word-internal devoicing in Tswana
  → Complementary distribution

- Post-nasal devoicing: reported in 8 languages
  → Complementary distribution
Advantages

- Traces of complementary distribution both in Kiput and Berawan
- I argue that a set of three sound changes operated in the development of Kiput and Berawan dialects:
  - Advantages:
    - Explains asymmetries v, j̃, g vs. b, d and b, g vs. d
    - Explains why d lenites! and b and g seemingly “devoice” in the same environment
    - No problems with relative chronology
    - Natural sound changes
Conclusions

- Implications for the general theory of sound change
- Intervocalic devoicing is not a natural process
- Sound change cannot operate against universal phonetic tendency
- IVD is not attested as synchronic process, but also not as a sound change: sound change is not less constrained that synchronic phonology
References


Thank you!

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