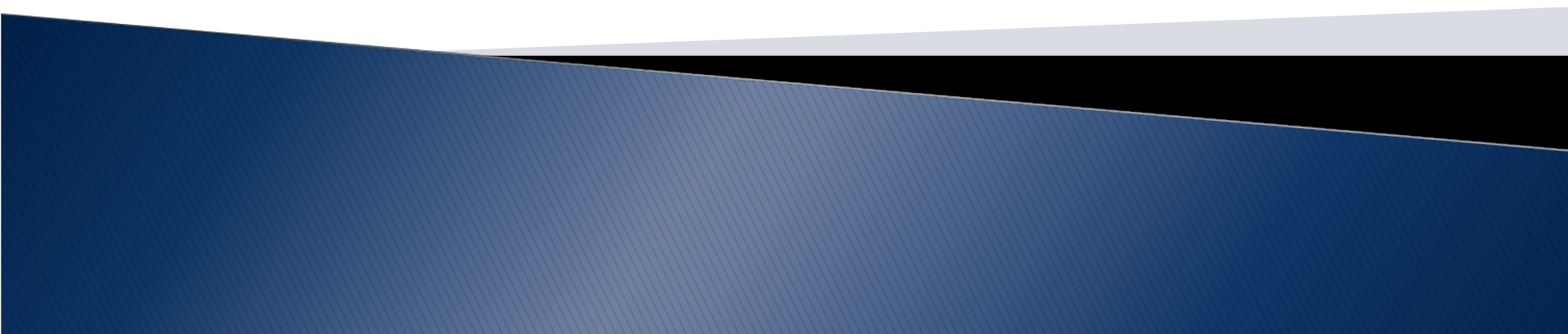


# A Brief Overview of Ryukyuan Morphophonemics

Kerri L Russell

East Asian Linguistics Seminar  
2 February 2010







# Ryukyuan Language Family?

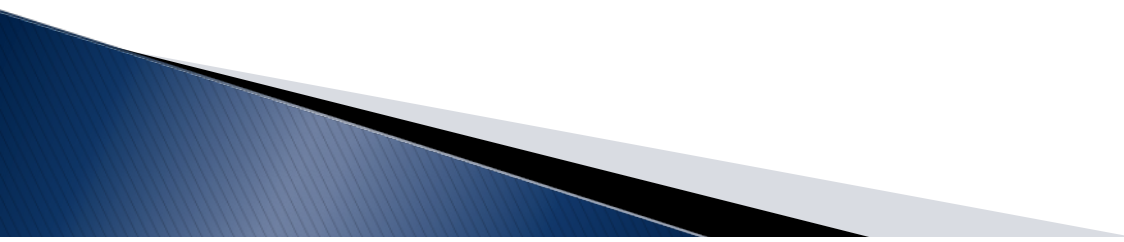
- Thorpe (1983)
  - I. Amami-Okinawa
    - A. North Amami
    - B. South Amami-North Okinawa
    - C. Central and South Okinawa
  - II. Sakishima
    - A. Miyako
    - B. Yaeyama
  - III. Yonaguni



# Ryukyuan Language Family?

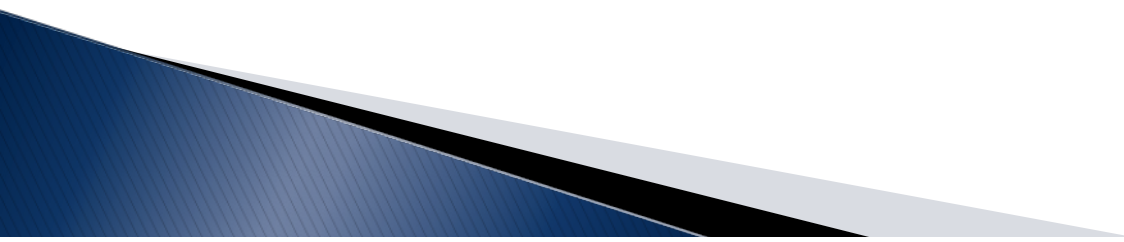
- Serafim (2004)
  - I. Northern Ryūkyūan (Amami-Okinawa)
  - II. Miyako
  - III. Yaeyama
  - IV. Yonaguni

Miyako & Yaeyama? (p.c. 2010)



# Ryukyuan Language Family?

- Bentley (2005, 2008)
  - (I. Northern Ryukyuan)
  - II. Southern Ryukyuan (Sakishima)
    - A. Miyako
    - B. Yaeyama, Yonaguni



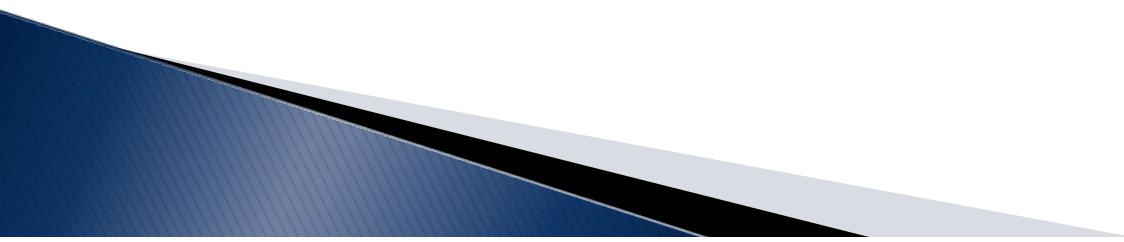
# Ryukyuan Language Family?

- Pellard (2010)
  - I. Northern Ryukyuan
    - A. Amami
    - B. Okinawa
  - II. Southern Ryukyuan
    - A. Miyako
    - B. Macro-Yaeyama (incl. Yonaguni)



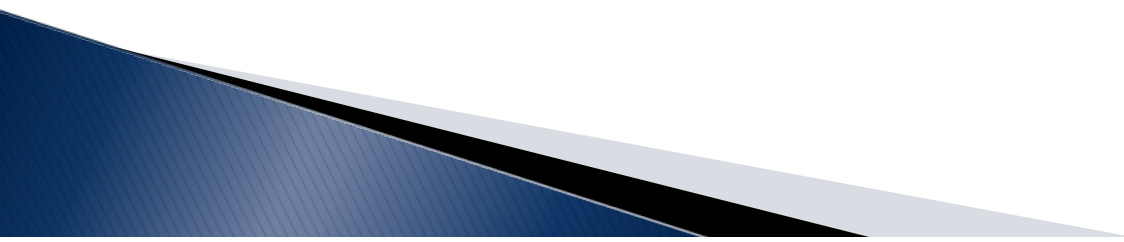
# Ryukyuan Language Family?

- More research is needed.
- Studied representatives from each area:
  - Northern Ryukyuan: Yamatoma
  - Central Ryukyuan: Shuri (Standard Okinawan)
  - Southern Ryukyuan: Hirara
- Selection criteria



# Northern Ryukyuan

- Yamatoma primary sources
  - Osada, Suyama, and Fuji (1977&1980)
  - Shibata, ed. (1984)



# Yamatoma Phonology

- Consonants

|            |           | Labial |     | Dental |     |                | Palatal |    | Velar |     |                | Glottal |
|------------|-----------|--------|-----|--------|-----|----------------|---------|----|-------|-----|----------------|---------|
|            |           |        | dbl |        | dbl | asp            |         |    |       | dbl | asp            |         |
| Stops      | voiceless | p      | pp  | t      | tt  | t <sup>h</sup> |         |    | k     | kk  | k <sup>h</sup> | ʔ       |
|            | voiced    | b      |     | d      |     |                |         |    | g     |     |                |         |
| Fricatives | voiceless |        |     | s      | ss  |                | ç       | çç |       |     |                | h       |
|            | voiced    |        |     | z      |     |                |         |    |       |     |                |         |
| Nasals     |           | m      |     | n      |     |                |         |    |       |     |                |         |
| Liquids    |           |        |     | r      |     |                |         |    |       |     |                |         |
| Glides     |           | y      |     |        |     |                |         |    |       |     |                | ,       |

note: *dbl* = a double consonant, *asp* = an aspirated consonant

| Phoneme | Phonetic Value                      | Allophones                                                                                                                         |
|---------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| /p/     | voiceless unaspirated bilabial stop | [p] everywhere                                                                                                                     |
| /t/     | voiceless unaspirated dental stop   | [č] preceding /i/ and /y/ or following /i/<br>[t] elsewhere                                                                        |
| /k/     | voiceless unaspirated velar stop    | [k] everywhere                                                                                                                     |
| /ç/     | voiceless palatal fricative         | [tž] preceding /i/ and /y/<br>[tz] elsewhere                                                                                       |
| /s/     | voiceless dental fricative          | [š] preceding /i/ and /y/<br>[s] elsewhere                                                                                         |
| /ʔ/     | glottal stop                        | [ʔ] everywhere                                                                                                                     |
| /h/     | glottal fricative                   | [ç] preceding /i/ and /ya/, /yo/, and /yu/<br>[k <sup>h</sup> ] preceding /e/, /i/, and /ye/<br>[ϕ] preceding /w/<br>[h] elsewhere |

# Yamatoma Phonology

| Phoneme | Phonetic Value          | Allophones                                   |
|---------|-------------------------|----------------------------------------------|
| /b/     | voiced bilabial stop    | [b] in all environments                      |
| /d/     | voiced dental stop      | [dʒ] preceding /i/ and /y/<br>[d] elsewhere  |
| /g/     | voiced velar stop       | [g] in all environments                      |
| /z/     | voiced dental fricative | [dʒ] preceding /i/ and /y/<br>[dz] elsewhere |

# Yamatoma Phonology

| Phoneme | Phonetic Value            | Allophones                                                           |
|---------|---------------------------|----------------------------------------------------------------------|
| /m/     | [m] - bilabial nasal stop | [m] in all environments                                              |
| /n/     | [n] - dental nasal stop   | [ɲ] preceding /i/ and /y/<br>[ŋ] before /k/ and /g/<br>[n] elsewhere |

# Yamatoma Phonology

- Liquid and glides

- /r/ [r] in all environments
- /y/, /w/
- /ʔ/

- ʔuri- 'go down, descend'

ʔuri- 'break, fold'

- ʔya 'arrow'

ʔya 'house'

- Not only initial:

- k<sup>h</sup>a'i 'rice gruel'

- a'omi 'blue'



# Yamatoma Phonology

- Vowels

i

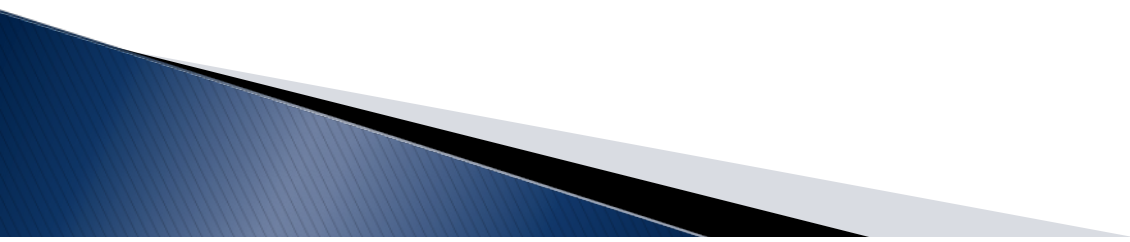
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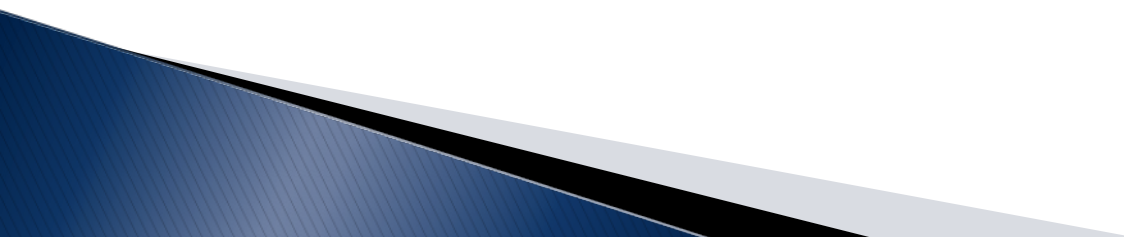
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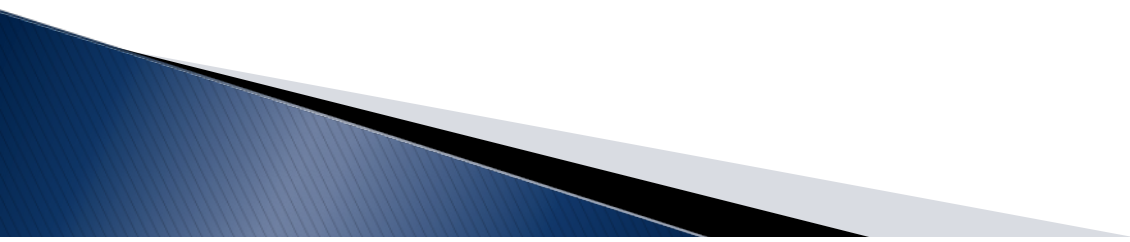
# Yamatoma Phonology

- Vowels
  - Long and short
  - Monosyllabic words are not always long



# Yamatoma Phonology

- Diachronic changes



# Yamatoma Phonology

- Proto-RK > Yamatoma
  - \*/p/ > /h/ morpheme initially
    - except before \*/e/ where \*/p/ > /hw/ [ϕ]
  - \*k > \*k<sup>h</sup>/V<sub>[-high]</sub>
  - \*k > \*k<sup>h</sup> > h / V<sub>[-high]</sub> — V<sub>[-high]</sub>
  - \*ti > çi
  - \*tu > çï

## Yamatoma

| Year | Percentage of population aged 65 and over |
|------|-------------------------------------------|
| 1950 | 7.0                                       |
| 1960 | 7.5                                       |
| 1970 | 8.0                                       |
| 1980 | 8.5                                       |
| 1990 | 9.0                                       |
| 2000 | 9.5                                       |
| 2010 | 10.0                                      |
| 2020 | 10.5                                      |
| 2030 | 11.0                                      |
| 2040 | 12.0                                      |
| 2050 | 14.0                                      |

\*e

\_\_\_\_\_

1

\*u

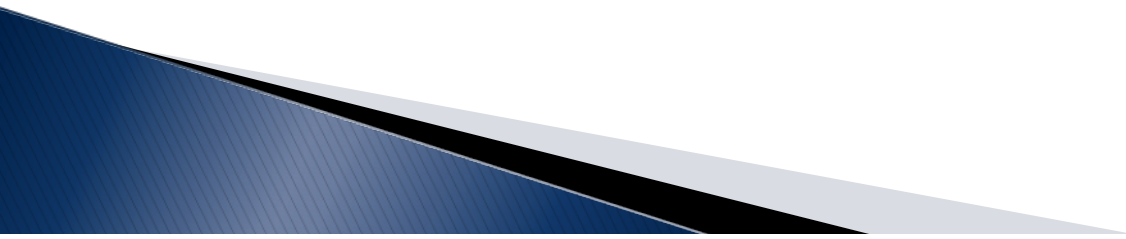
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| Year | Percentage of Population Aged 65 and Over |
|------|-------------------------------------------|
| 1950 | 7.0                                       |
| 1960 | 8.0                                       |
| 1970 | 9.0                                       |
| 1980 | 10.0                                      |
| 1990 | 11.0                                      |
| 2000 | 12.0                                      |
| 2010 | 13.0                                      |
| 2020 | 14.0                                      |
| 2030 | 15.0                                      |
| 2040 | 16.0                                      |
| 2050 | 18.0                                      |

$$*_a \text{-----} a$$

# Yamatoma Phonology

- Proto-RK > Yamatoma
  - \*/u/ > /i/ following coronal consonants
  - \*/e/ and \*/o/ sometimes raise to /i/ and /u/
    - but not always

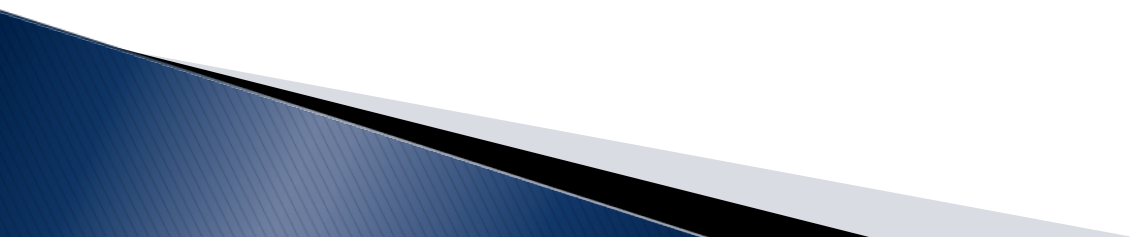


# Yamatoma Phonology

| proto-RK       | Stage 1                                | Stage 2                  | Stage 3                  | Stage 4                   | gloss     |
|----------------|----------------------------------------|--------------------------|--------------------------|---------------------------|-----------|
|                | Aspiration                             | Raising                  | Assimilation             | /k/ > /h/                 |           |
| <i>*ke</i>     | <i>*k<sup>h</sup>e</i>                 | <i>k<sup>h</sup>i</i>    | _____                    | _____                     | 'tree'    |
| <i>*woke</i>   | <i>*wok<sup>h</sup>e</i>               | <i>*wuk<sup>h</sup>i</i> | <i>*wik<sup>h</sup>i</i> | <i>wihī</i>               | 'bucket'  |
| <i>*kokoro</i> | <i>*k<sup>h</sup>ok<sup>h</sup>oro</i> | _____                    | _____                    | <i>k<sup>h</sup>ohoro</i> | 'heart'   |
| <i>*te</i>     | <i>*t<sup>h</sup>e</i>                 | <i>t<sup>h</sup>i</i>    | _____                    | _____                     | 'hand'    |
| <i>*peto</i>   | <i>*hwet<sup>h</sup>o</i>              | <i>hwit<sup>h</sup>u</i> | _____                    | _____                     | 'dolphin' |
| <i>*mot-</i>   | <i>*mot<sup>h</sup>-</i>               | <i>mut<sup>h</sup>-</i>  | _____                    | _____                     | 'hold'    |
| <i>*yak-</i>   | <i>*yak<sup>h</sup>-</i>               | <i>yak<sup>h</sup>-</i>  | _____                    | _____                     | 'burn'    |

# Yamatoma Morphophonemics

- Examples



# Yamatoma Morphophonemics

- Evidence for /'/

| verb stem       |                           | infinitive -i             | stative -yu-ri              | gloss         |
|-----------------|---------------------------|---------------------------|-----------------------------|---------------|
| ending in /'/   | <i>mok<sup>h</sup>a'-</i> | <i>mok<sup>h</sup>a'i</i> | <i>mok<sup>h</sup>a'uri</i> | 'turn'        |
| consonant final | <i>muk-</i>               | <i>muki</i>               | <i>mukuri</i>               | 'turn around' |
| vowel final     | <i>mok<sup>h</sup>e-</i>  | <i>mok<sup>h</sup>e</i>   | <i>mok<sup>h</sup>eruri</i> | 'greet'       |

# Yamatoma Morphophonemics

- Diachronic evidence for /ʔ/

| <u>Yamatoma</u>           | <u>WOJ</u>    | <u>gloss</u> |
|---------------------------|---------------|--------------|
| <i>ha'-</i>               | <i>pap-</i>   | crawl        |
| <i>mok<sup>h</sup>a'-</i> | <i>mukap-</i> | turn, face   |
| <i>ʔo:ʔ-</i>              | <i>ap-</i>    | meet         |
| <i>ʔomoʔ-</i>             | <i>omöp-</i>  | think        |
| <i>çigaʔ-</i>             | <i>tigap-</i> | differ       |

# Yamatoma Morphophonemics

- Aspiration as evidence

*çizik<sup>h</sup>-*                      'continue' (v.i.)

*çizik<sup>h</sup>-i-*                    'continue' (v.t.)

*k<sup>h</sup>-*                              'come'

*t<sup>h</sup>at<sup>h</sup>-*                        'stand' (v.i.)

*t<sup>h</sup>at<sup>h</sup>-i-*                      'stand' (v.t.)

*ʔuk<sup>h</sup>-*                          'float' (v.i.)

*ʔuk<sup>h</sup>-i-*                        'float' (v.t.)

# Yamatoma Morphophonemics

- Aspiration as evidence

| Yamatoma                      | < | pre-Yamatoma                              | gloss             |
|-------------------------------|---|-------------------------------------------|-------------------|
| $\zeta\dot{iz}ik^h-$          | < | $*\zeta\dot{iz}ik^hV_{[-high]}-$          | 'continue' (v.i.) |
| $\zeta\dot{iz}ik^h-\ddot{i}-$ | < | $*\zeta\dot{iz}ik^hV_{[-high]}-\ddot{i}-$ | 'continue' (v.t.) |
| $k^h-$                        | < | $*k^hV_{[-high]}-$                        | 'come'            |
| $t^hat^h-$                    | < | $*t^hat^hV_{[-high]}-$                    | 'stand' (v.i.)    |
| $t^hat^h-\ddot{i}-$           | < | $*t^hat^hV_{[-high]}-\ddot{i}-$           | 'stand' (v.t.)    |
| ${}^?uk^h-$                   | < | $*{}^?uk^hV_{[-high]}-$                   | 'float' (v.i.)    |
| ${}^?uk^h-\ddot{i}-$          | < | $*{}^?uk^hV_{[-high]}-\ddot{i}-$          | 'float' (v.t.)    |

# Yamatoma Morphophonemics

- perfective  $-t^h-$  or gerund  $-t^h\ddot{i}-$  affixed to consonant final verb stems
  - $/t^h/ > /t^h/$  following  $/\prime/, /n/, /r/$
  - $/t^h/ > /t/$  following  $/k/$
  - $/t^h/ > /z/$  following  $/k^h/$
  - $/t^h/ > /ç/$  following  $/s/$
  - $/t^h/ > /çç/$  following  $/kk/$
  - $/t^h/ > /d/$  following  $/b/, /m/$



# Yamatoma Morphophonemics

- perfective  $-t^h-$  or gerund  $-t^h\ddot{i}-$  affixed to consonant final verb stems
- $/t^h/ > /t^h/$  following  $/\prime/$ ,  $/n/$ ,  $/r/$
- $/\prime/$  is deleted
  - $\text{'omo'}$ - 'think'  
 $\text{'omo-}t^h\ddot{i}$  think-GER 'thinking'
  - -ran-'NEG'  
 $\text{'imor-yo:-ran-}t^h\ddot{i}$  be/HON-NPS-NEG-GER  
'wasn't there'
  - $\text{'ar-}$  'exist'  
 $\text{'at-}t^h\ddot{i}$ -o exist-PERF-NPS 'will exist'

# Yamatoma Morphophonemics

- perfective  $-t^h-$  or gerund  $-t^h\ddot{i}-$  affixed to consonant final verb stems
- $/t^h/ > /t/$  following  $/k/$
- $/k/$  is deleted
  - nak- 'cry'  
na-**t**-ya cry-PERF-PST 'cried'



# Yamatoma Morphophonemics

- perfective  $-t^h-$  or gerund  $-t^h\ddot{i}-$  affixed to consonant final verb stems
- $/t^h/ > /z/$  after  $/k^h/$
- $/k^h/$  is deleted
  - $ʔik^h-$  'go'
  - $ʔi\text{-}z\text{I}$  go-GER 'going'



# Yamatoma Morphophonemics

- perfective  $-t^h-$  or gerund  $-t^h\ddot{i}-$  affixed to consonant final verb stems
- $/t^h/ > /ç/$  following  $/s/$
- $/s/$  is deleted
  - haras- 'flow'  
hara- $\textcolor{blue}{çi}$  flow-GER 'flowing'



# Yamatoma Morphophonemics

- perfective  $-t^h-$  or gerund  $-t^h\ddot{i}-$  affixed to consonant final verb stems
- $/t^h/ > /çç/$  following  $/kk/$
- $/kk/$  is deleted
  - $ʔakk-$  'walk'
  - $ʔaçç-ya$  walk/PERF-PST 'walked'



# Yamatoma Morphophonemics

- perfective  $-t^h-$  or gerund  $-t^h\ddot{i}-$  affixed to consonant final verb stems
- $/t^h/ > /d/$  following  $/b/$ ,  $/m/$
- $/b/$  and  $/m/$  are deleted
  - narab- 'learn'  
nara-**d**-u-ri learn-PERF-STAT-FIN 'are learning'
  - k<sup>h</sup>am- 'eat'  
k<sup>h</sup>a-**d** $\ddot{i}$  eat-GER 'eating'



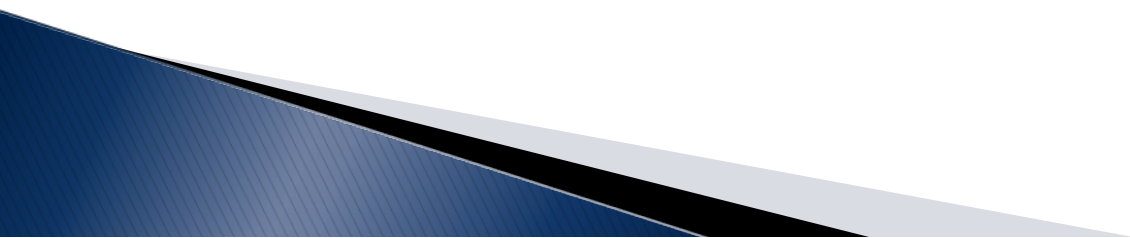
# Central Ryukyuan

- Shuri
  - Kokuritsu Kokugo Kenkyūjō (1982, 1986, 1987a, 1987b)
  - Shibata (1966-1977)
  - Karimata (2003)



# Shuri Phonology

- Consonants



|            |           | Labial |    | Dental |    | Palatal |     | Velar |    | Glottal |
|------------|-----------|--------|----|--------|----|---------|-----|-------|----|---------|
|            |           |        |    |        |    |         |     |       |    |         |
| Stops      | voiceless | p      | pp | t      | tt |         |     | k     | kk | ʔ       |
|            | voiced    | b      |    | d      |    |         |     | g     |    |         |
| Fricatives | voiceless |        |    | s      | ss | (š)     | (ç) |       |    | h       |
|            | voiced    |        |    | (z)    |    |         |     |       |    |         |
| Affricates | voiceless |        |    | č      | čč |         |     |       |    |         |
|            | voiced    |        |    | ž      |    |         |     |       |    |         |
| Nasals     |           | m      |    | n      |    |         |     |       |    |         |
| Liquids    |           |        |    | r      |    |         |     |       |    |         |
| Glides     |           | w      |    |        |    | y       |     |       |    |         |

| Phoneme | Phonetic Value                      | Allophones                                                              |
|---------|-------------------------------------|-------------------------------------------------------------------------|
| /p/     | voiceless unaspirated bilabial stop | [p] in all environments                                                 |
| /t/     | voiceless unaspirated dental stop   | [č] following /i/<br>[ç] preceding /u/<br>[t] elsewhere                 |
| /k/     | voiceless unaspirated velar stop    | [k] in all environments                                                 |
| /č/     | voiceless dental affricate          | [č] in all environments                                                 |
| /ç/     | voiceless palatal central fricative | [č] preceding /i/, /e/, and /y/<br>[ç] elsewhere                        |
| /s/     | voiceless dental fricative          | [š] preceding /i/, /e/, and /y/<br>[s] elsewhere                        |
| /š/     | voiceless palatal grooved fricative | [š] preceding /i/, /e/, and /y/<br>[s] elsewhere                        |
| /ʔ/     | glottal stop                        | [ʔ] in all environments                                                 |
| /h/     | glottal fricative                   | [ç] preceding /i/ and /y/<br>[f] preceding /u/ and /w/<br>[h] elsewhere |

# Shuri Phonology

| Phoneme | Phonetic Value          | Allophones                                       |
|---------|-------------------------|--------------------------------------------------|
| /b/     | voiced bilabial stop    | [b] in all environments                          |
| /d/     | voiced dental stop      | [ʒ] following /i/<br>[d] elsewhere               |
| /g/     | voiced velar stop       | [g] in all environments                          |
| /z/     | voiced dental fricative | [ʒ] following /i/, /e/, and /y/<br>[z] elsewhere |
| /ʒ/     | voiced dental affricate | [ʒ] in all environments                          |

# Shuri Phonology

| Phoneme | Phonetic Value            | Allophones                                                           |
|---------|---------------------------|----------------------------------------------------------------------|
| /m/     | [m] - bilabial nasal stop | [m] in all environments                                              |
| /n/     | [n] - dental nasal stop   | [ɲ] preceding /i/ and /y/<br>[ŋ] before /k/ and /g/<br>[n] elsewhere |

# Shuri Phonology

- Liquid and glides
    - /r/ [r] in all environments
    - /y/
      - Occurs before /a/, /u/, /o/
      - follows /p/, /b/, /m/, /n/, /h/, /ʔ/
    - /w/
      - Occurs before /i/, /e/, /a/
      - follows /h/, /ʔ/, /k/ and /g/
    - [ʼ] (predictable, not a phoneme)
      - Occurs before vowels, glides, and /n/ in initial position in cases where no other consonants occur
- 

# Shuri Phonology

- Vowels

## Short Vowels

i

u

a

## Long Vowels

i:

u:

e:

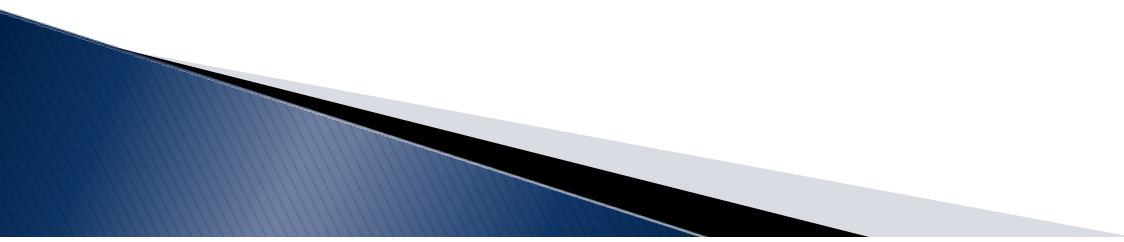
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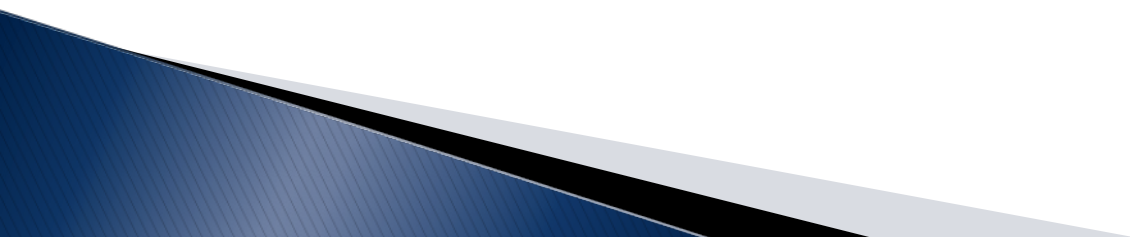
# Shuri Phonology

- Long vowels
  - /e:/ and /o:/ from \*/ai/ and \*/au/
  - Monosyllabic words are lengthened



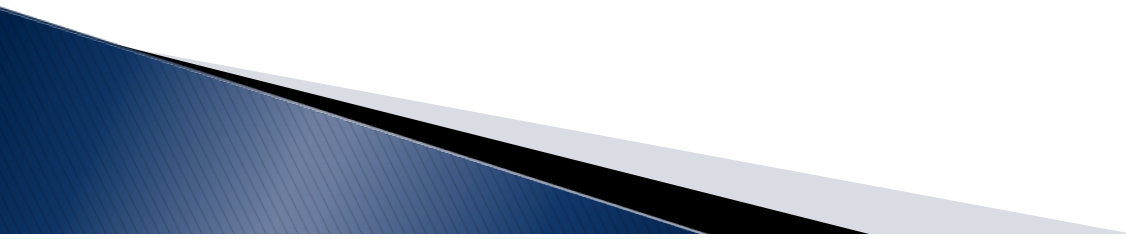
# Shuri Phonology

- Diachronic changes



# Shuri Phonology

- Proto-RK > Shuri
  - Shuri /i/ is from \*/i/, \*/u/, \*/e/
  - Shuri /u/ is from \*/u/ and \*/o/



# Shuri Phonology

- Palatalization of \*/k/ and \*/t/ adjacent to \*/i/
  - proto-RK \*sita 'below' > Shuri siča 'id.'
  - proto-RK \*ika 'squid' > Shuri iča 'id.'
  - proto-RK \*tika- 'near' > Shuri čika- ~ čiča- 'id.'
- Palatalization of \*/g/ and \*/d/ also occurs
  - \*/gi/ > /ži/, \*/di/ > /ži/



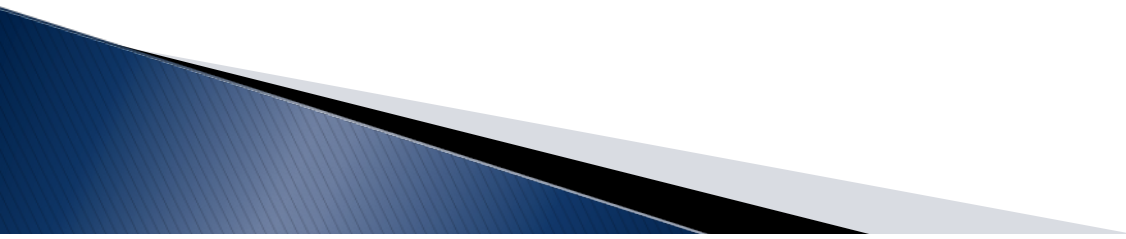
# Shuri Phonology

- /ki/ and /ti/ exist in Shuri
  - From \*ke and \*te
  - Stage One: Palatalization
    - proto-RK \*ki and \*ti become /či/
  - Stage Two: Rule is lost
  - Stage Three: Vowel raising
    - proto-RK \*/e/ raises to \*/i/
    - \*/ke/ and \*/te/ become Shuri /ki/ and /ti/
- Same for /gi/ and /di/



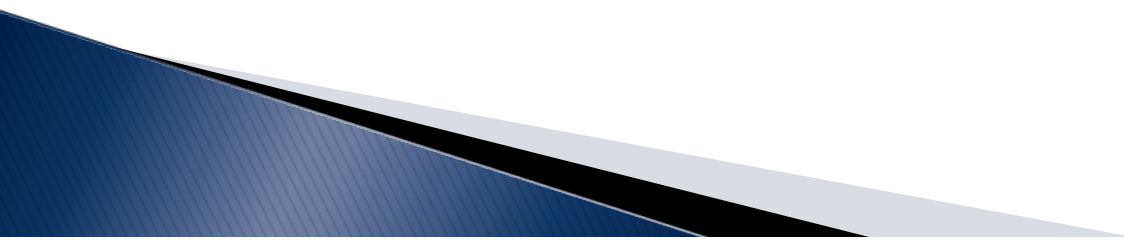
# Shuri Phonology

- \*p > f / \_i
- \*p > h / elsewhere



# Shuri Phonology

- Double consonants
  - /pp/, /tt/, /kk/, /ss/, and /čč/
  - Result of vowel loss between consonants
  - proto-RK \*pito > \*pičo > \*piču > \*pču > Shuri čču



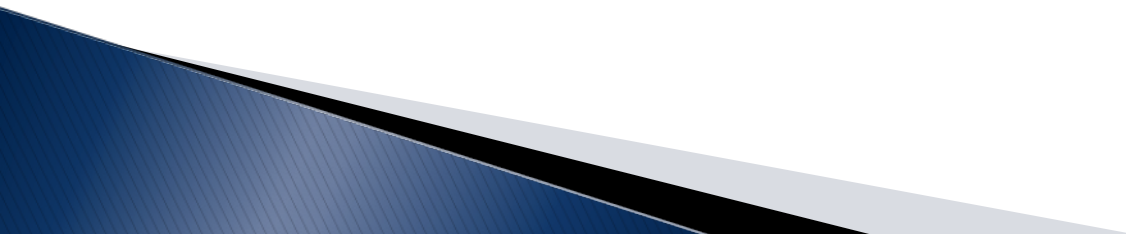
# Shuri Phonology

- \*/ri/ > /i/
  - proto-RK \*tori 'bird' > Shuri \*tui 'id.'
  - /ri/ from proto-RK \*/re/
  - Stage One: \*/ri/ becomes Shuri /i/
  - Stage Two: Rule is lost
  - Stage Three: proto-RK \*/e/ raises to \*/i/
    - the syllable \*/re/ becomes Shuri /ri/



# Shuri Morphophonemics

- Examples



# Shuri Morphophonemics

- Negative *-ran(-)*
  - Adapted from Ashworth (1973: 82-83)
    - The initial consonant /r/ is deleted following a consonant.
    - The nasal plus high vowel – either infinitive /i/ or final /u/ – become /n/.
    - Change of /nr/ to /nd/.



# Shuri Morphophonemics

- Negative *-ran(-)*

|                   | Rule 1        |   | Rule 2         |   | Rule 3        |  | gloss             |
|-------------------|---------------|---|----------------|---|---------------|--|-------------------|
|                   | deletion      |   | /n/            |   | /nr/ > /nd/   |  |                   |
| <i>kak-ran-u</i>  | <i>kakanu</i> | > | <i>kakan</i>   | > | ————          |  | 'doesn't write'   |
| <i>nom-ran-u</i>  | <i>nomanu</i> | > | <i>noman</i>   | > | ————          |  | 'doesn't drink'   |
| <i>ʔuki-ran-u</i> | ————          | > | <i>ʔukiran</i> | > | ————          |  | 'doesn't wake up' |
| <i>kumi-ran-u</i> | ————          | > | <i>kunran</i>  | > | <i>kundan</i> |  | 'doesn't bind'    |
| <i>nemu-ran-u</i> | ————          | > | <i>nenran</i>  | > | <i>nendan</i> |  | 'doesn't sleep'   |

# Shuri Morphophonemics

- Gerund *-ti*
- No assimilation?

vowel final verb roots:

|                |   |               |                    |
|----------------|---|---------------|--------------------|
| <i>či-ti</i>   | > | <i>čiči</i>   | 'wearing'          |
| <i>ko:-ti</i>  | > | <i>ko:ti</i>  | 'buying'           |
| <i>nu-ti</i>   | > | <i>nuti</i>   | 'riding'           |
| <i>ʔuki-ti</i> | > | <i>ʔukiti</i> | 'waking up (v.i.)' |

# Shuri Morphophonemics

- Gerund *-ti*
  - Consonant stems (rules modified from Ashworth 1973: 75-77)
    1. If the final consonant is voiced or a labial, then *-ti* > *-di*.
    2. If the final consonant is /k/, /s/, /g/, or /n/, then *-ti*, *-di* > *-či*, *-ži*.
    3. After 1 and/or 2 apply, the final consonant of the root is deleted, unless the final consonant is an /n/ (see Rule 4) or /r/ or /t/ (see Rule 5).
- 

# Shuri Morphophonemics

|                | Rule 1          |   | Rule 2          |   | Rule 3       | gloss      |
|----------------|-----------------|---|-----------------|---|--------------|------------|
|                | voicing         |   | palatalization  |   | deletion     |            |
| <i>fus-ti</i>  | ————            | > | * <i>fusči</i>  | > | <i>fuči</i>  | 'drying'   |
| <i>kak-ti</i>  | ————            | > | * <i>kakči</i>  | > | <i>kači</i>  | 'writing'  |
| <i>ku:g-ti</i> | * <i>ku:gdi</i> | > | * <i>ku:gži</i> | > | <i>ku:ži</i> | 'rowing'   |
| <i>num-ti</i>  | * <i>numdi</i>  | > | ————            | > | <i>nudi</i>  | 'drinking' |
| <i>sin-ti</i>  | * <i>sindi</i>  | > | * <i>sinži</i>  | > | <i>siži</i>  | 'dying'    |
| <i>tub-ti</i>  | * <i>tubdi</i>  | > | ————            | > | <i>tudi</i>  | 'flying'   |

# Shuri Morphophonemics

- Gerund *-ti*

4. If the final consonant of the root is an /n/, then the underlying vowel determines the shape of the gerund. If the underlying vowel is /i/ then *-ti* is palatalized, if /u/ then palatalization does not occur.

|                | Rule 4           | nasal+high vowel | gloss      |
|----------------|------------------|------------------|------------|
|                | palatalization   | become /n/       |            |
| <i>kumi-ti</i> | <i>*kumiči</i> > | <i>kunči</i>     | 'binding'  |
| <i>nemu-ti</i> | ———— >           | <i>nenti</i>     | 'sleeping' |

# Shuri Morphophonemics

- Gerund *-ti*

5. If the final consonant is /r/ or /t/, the gerund becomes a palatalized double consonant.

|               | palatalization |   | assimilation | gloss      |
|---------------|----------------|---|--------------|------------|
| <i>tat-ti</i> | * <i>tatči</i> | > | <i>tačči</i> | 'standing' |
| <i>čir-ti</i> | * <i>čirči</i> | > | <i>čičči</i> | 'cutting'  |

# Shuri Morphophonemics

- Final *-yun*

vowel final stems

|          |   |         |                  |
|----------|---|---------|------------------|
| č̌i-yun  | > | č̌iyun  | 'wear'           |
| tu-yun   | > | tuyun   | 'take'           |
| ʔuki-yun | > | ʔukiyun | 'wake up (v.i.)' |
| wara-yun | > | warayun | 'laugh'          |

# Shuri Morphophonemics

- Final *-yun*

consonant final stems

|           |   |         |                      |
|-----------|---|---------|----------------------|
| kand-yun  | > | kaṅzun  | 'cover (one's head)' |
| kak-yun   | > | kačun   | 'write'              |
| nas-yun   | > | nasyun  | 'give birth'         |
| tat-yun   | > | tačun   | 'stand'              |
| tub-yun   | > | tubun   | 'fly'                |
| ʔwi:g-yun | > | ʔwi:zun | 'swim'               |
| 'yum-yun  | > | 'yunun  | 'read'               |

# Shuri Morphophonemics

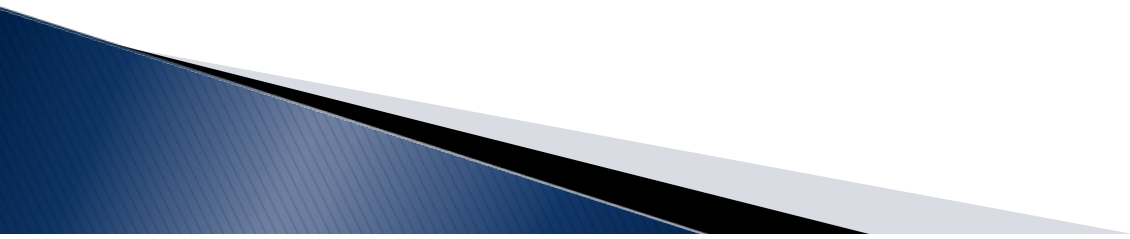
- Final *-yun*

## following stative auxiliaries

|         |   |      |            |
|---------|---|------|------------|
| -a-yun  | > | -an  | 'PST-FIN'  |
| -e:-yun | > | -e:n | 'PROG-FIN' |
| -o:-yun | > | -o:n | 'NPS-FIN'  |
| -u-yun  | > | -un  | 'STAT-FIN' |

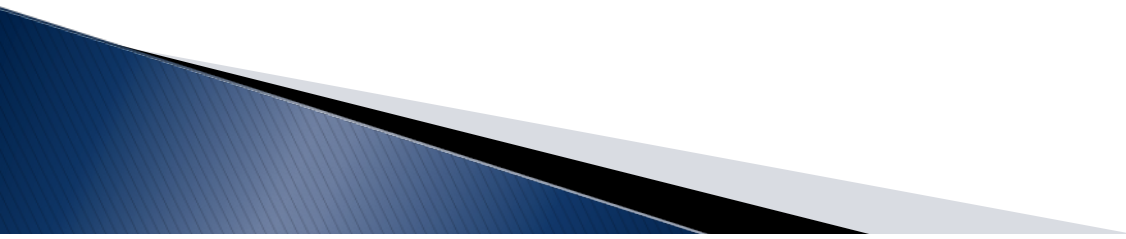
# Southern Ryukyuan

- Hirara
  - Nevskii (1978)
  - Nohara (1986: 361-394)
  - Hirayama (1967, 1983, 1988)



# Hirara Phonology

- Consonants



# Hirara Phonology

|            |           | Labial | Labiodental |     | Dental |     | Palatal |     | Velar | Glottal |
|------------|-----------|--------|-------------|-----|--------|-----|---------|-----|-------|---------|
|            |           |        |             | dbl |        | dbl |         | dbl |       |         |
| Stops      | voiceless | p      |             |     | t      | tt  |         |     | k     |         |
|            | voiced    | b      |             |     | d      | dd  |         |     | g     |         |
| Fricatives | voiceless |        | f           | ff  | s      | ss  | ç       | çç  |       | h       |
|            | voiced    |        | v           | vv  | z      | zz  |         |     |       |         |
| Nasals     |           | m      |             |     | n      |     |         |     |       |         |
| Liquids    |           |        |             |     | r      |     |         |     |       |         |
| Glides     |           | w      |             |     |        |     | y       |     |       |         |

note: *dbl* = a double consonant

# Hirara Phonology

| Phoneme | Phonetic Value                      | Allophones                                 |
|---------|-------------------------------------|--------------------------------------------|
| /p/     | voiceless unaspirated bilabial stop | [p] in all environments                    |
| /t/     | voiceless unaspirated dental stop   | [t] in all environments                    |
| /k/     | voiceless unaspirated velar stop    | [k] in all environments                    |
| /f/     | voiceless labiodental fricative     | [f] in all environments                    |
| /ç/     | voiceless dental fricative          | [č] preceding /i/ and /y/<br>[ç] elsewhere |
| /s/     | voiceless dental fricative          | [š] preceding /i/ and /y/<br>[s] elsewhere |
| /h/     | glottal fricative                   | [h] in all environments                    |

# Hirara Phonology

| Phoneme | Phonetic Value               | Allophones                                 |
|---------|------------------------------|--------------------------------------------|
| /b/     | voiced bilabial stop         | [b] in all environments                    |
| /d/     | voiced dental stop           | [d] in all environments                    |
| /g/     | voiced velar stop            | [g] in all environments                    |
| /v/     | voiced labiodental fricative | [v] in all environments                    |
| /z/     | voiced dental fricative      | [ž] preceding /i/ and /y/<br>[z] elsewhere |

# Hirara Phonology

| Phoneme | Phonetic Value            | Allophones                                                                                                           |
|---------|---------------------------|----------------------------------------------------------------------------------------------------------------------|
| /m/     | [m] - bilabial nasal stop | [m̥] preceding /m/<br>[m̥] preceding /n/<br>[m] elsewhere                                                            |
| /n/     | [n] - dental nasal stop   | [n̥] preceding /s/ and word finally<br>[m] preceding /m/, /p/, and /b/<br>[ŋ] preceding /k/ and /g/<br>[n] elsewhere |

# Hirara Phonology

- Liquid and glides

- /r/
  - [l] before consonants and word finally
  - [r] elsewhere
- /rr/ [ll]
- /y/
  - Only before /a/, /o/, /u/
  - Can occur word initially or follow any consonant
- /w/
  - Before /a/ or /o/
  - /kwa/ and /gwa/

# Hirara Phonology

- Vowels

## Short Vowels

i

ĩ

u

a

## Long Vowels

i:

ĩ:

u:

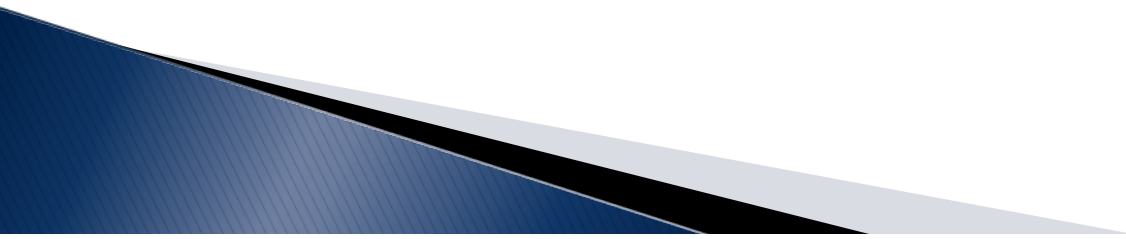
o:

a:



# Hirara Phonology

- Diachronic changes



# Hirara Phonology

- PRK > Hirara

- \*i > i / #\_, n\_      \*i > ĭ elsewhere
- \*e > i
- \*u > ĭ / C<sub>[+coronal]</sub>—      \*u > u elsewhere
- \*o > u
- \*a > a

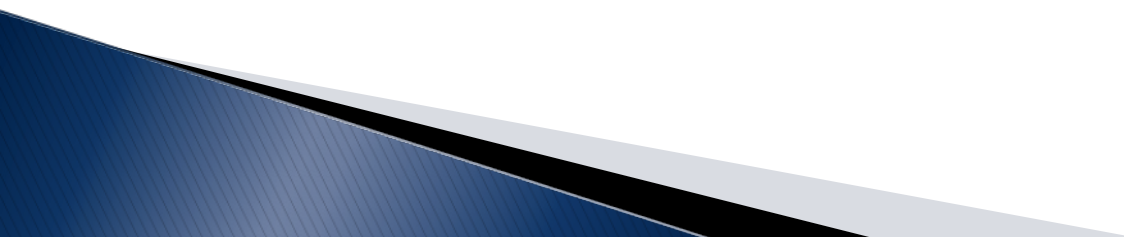


# Hirara Phonology

- $*k > h / \_u$ 
  - Hirara /ku/
  - Stage One:  $*/k/$  becomes  $*/h/$  before  $*/u/$
  - Stage Two: Rule disappears
  - Stage Three: The proto-RK vowel  $*/o/$  raises to  $*/u/$ 
    - $*/ko/$  becomes  $*/ku/$
- $*C_{[+voice]} aka > C_{[+voice]} aa$
- $*p > h / \_u$ 
  - Results in a merger of Proto-RK  $*/pu/$  and  $*/ku/$
  - Hirara /pu/ can be from either Proto-RK  $*/pu/$  and  $*/ku/$

# Hirara Phonology

- \*t > ɕ / \_i, u
  - /ti/ and /tu/ come from PRK \*/te/ or \*/to/



# Hirara Phonology

- \*/ri/ and \*/ru/ > /i/
  - Stage One: Proto-RK \*/i/ backs to /i/ following /r/, Proto-RK \*/u/ fronts to /i/ following /r/
    - Result is a merger: \*/ri/ and \*/ru/ > \*/rï/
  - Stage Two: Loss of rule.
  - Stage Three: \*/e/ raises to /i/ and \*/o/ raises to /u/
    - Result: /ri/ and /ru/
  - Stage Four: /r/ is deleted preceding /i/ and /i/
    - Result is /i/ and /i/



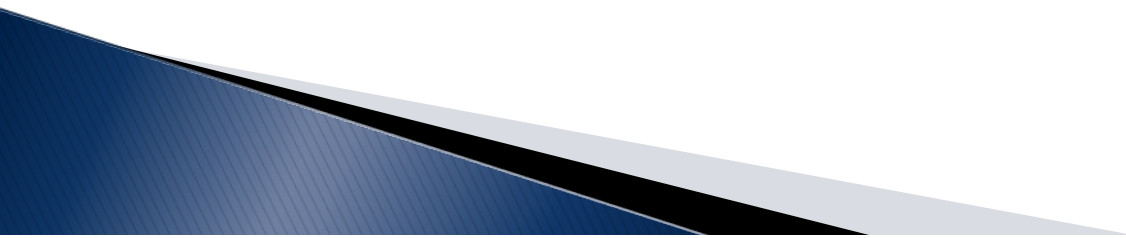
# Hirara Phonology

## Source of double consonants

|          |       |      |      |       |       |      |      |      |      |      |
|----------|-------|------|------|-------|-------|------|------|------|------|------|
| proto-RK | *bir  | *bur | *zir | *zur  | *gir  | *gur | *sir | *sur | *kir | *kur |
| Hirara   | bi(r) | vv   | zz   | zz~çç | gï(r) | vv   | ss   | ss   | kïs  | ff   |

# Hirara Morphophonemics

- Examples



# Hirara Morphophonemics

- Attributive -*ĩ*

## Vowel final stems

stem-ATT

gloss

*mi:-ĩ* > *mi:ĩ*

see

*uki-ĩ* > *ukiĩ*

wake



# Hirara Morphophonemics

- Attributive -*i*
- *kakī* 'write', *aro:* 'wash', *umu:* 'think', *num* 'drink'

## Consonant final stems

| stem-ATT       | > | contraction   |               | gloss |
|----------------|---|---------------|---------------|-------|
| * <i>kak-u</i> | > | * <i>kaku</i> | > <i>kakī</i> | write |
| * <i>ara-u</i> | > | <i>aro:</i>   |               | wash  |
| * <i>umu-u</i> | > | <i>umu:</i>   |               | think |
| * <i>num-u</i> | > | <i>num</i>    |               | drink |

# Hirara Morphophonemics

- Attributive -*ĩ*

Sentence final

*zyu: zi-ndu pĩtu-tu idy-o:*

ten hour-LOC person-COM meet-ATT

I'm meeting someone at ten o'clock.

(Hirayama 1983: 187)

.....  
.....

# Hirara Morphophonemics

- Attributive -*ĩ*

## Nominal modification

*a-ĩta-ĩ mun:-ba bassi-tt o:*

say-PERF/PROG-ATT thing-ACC forget-PERF EMPH

[He] will forget the things that were said.

(Hirayama 1983: 187)

# Hirara Morphophonemics

- Attributive -*ĩ*

Nominalized form of the verb

*kak-ĩ yuĩsa yum du masĩ*

write-ATT COMP read/ATT thing better

Reading is better than writing.

(Hirayama 1983: 187)

# Hirara Morphophonemics

Used with verbs indicating beginning or ending of an action

*tabaku: fuk-i padimi-i*

tobacco smoke-ATT begin-ATT

[I] began smoking.

(Hirayama 1983: 187)

*ma:ciki as-i tuzimi-ru*

together do-ATT end-IMP

Finish it together!

(Hirayama 1983: 187)



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