Japanese accent is largely predictable: Evidence from given names

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Here are some Japanese given names.

Ayaka
Wataru
Ryo
Junya
Yusuke
Yoshitaka
Yasutada
Shigeru

How will you pronounce them?
Here are some Japanese given names.

Aya
Wa-taru
Ryo
Junya
Yusuke
Yoshitaka
Yasutada
Shigeru

How will you pronounce them?
Here are some Japanese given names.

- Ayaka
- Wa taru (unaccented)
- Ryo o
- Junya
- Yu usuke
- Yoshi taka
- Yasu tada
- Shigeru (unaccented)

There are some specific rules for given names!
Findings

- Some onomastic (i.e. name-specific) suffixes have a deaccenting effect (e.g. Táke-to vs. Take-o)
- Voicing has an effect on vowel duration: the vowel is longer before [+voice] than before [-voice]; this results in the accentual consequences in Koo-taroo vs. Kóo-jiroo
- Longer names are analyzed as compounds and follow the compound noun rule.

- My analysis covers 91% of the names in our database (1200 popular given names from 1910’s to 2010).
- The analysis confirms recent research (Kubozono 2008, Ito and Mester 2011) that emphasizes the predictability of Japanese accent.
Outline

1. General Characteristics of Tokyo Japanese
2. Data
   - Gap between Given Names and Common Nouns
   - What Constitute the Category ‘Given Names’
3. Analysis
   - Non-derived Names
   - Derived Names
   - Names ending with -roo
   - Longer names as compound
4. Conclusions
1. General Characteristics of Tokyo Japanese
General characteristics

- Japanese: pitch accent language
- Words are divided into two accent classes, accented or unaccented.
- A pitch accent is realized by a steep fall in pitch right after the accented mora.
  - accented e.g. mégane ‘glasses’
    monogátari ‘story’
    otokó ‘man’
  - unaccented e.g. usagi ‘rabbit’
- For an $n$-mora noun, $n+1$ accent patterns are possible and they are contrastive. e.g. hási ‘chopsticks’ v.s. hasí ‘bridge’
Tokyo Japanese Characteristics

- **Initial Rise**: The pitch contour begins with L (L%) and proceeds on H until the accented syllable.
  - $^o_k$LHHL, LHH, LHHHHH, but $^*$HH, $^*$LLH
  - $^o_k$HL, HLL (accent on the 1^{st} mora)

- **Fall between long syllable** ((C)VV or (C)VN):

\[
\begin{array}{c|ccc|}
\text{ok} & \sigma & \ast & \sigma \\
\hline
\mu' & \mu \\
\mu & \mu'
\end{array}
\]
Tokyo Japanese Characteristics

- Ito & Mester (2011)
  “Accentually words fall into two subtypes.”

**Thematic accent type**
- Accent is assigned by a rule “Accent on the antepenultimate mora (if a word is short, initial syllable).”
- Whether a word is accented or not is lexically determined, and it is unpredictable.

**Athematic accent type**
- Not having the accent on the antepenultimate mora.
- Not only accentedness but the place of the accent is unpredictable.
  e.g. nouns, adverbs.

My proposal: given names fall into this type, and accentedness is predictable.
Tokyo Japanese Characteristics

- Ito & Mester (2011)
  - The split between thematic and athematic accent parallels similar distinction in other pitch accent language such as Ancient Greek.
  - The existence of unaccented words is not universal.

Is the unaccentedness default, or simply a lexical accident, or are there reasons why certain words tend to be unaccented?

“[A] close investigation of the results of the previous research on Japanese accent system has shown that unaccentedness is not some general default, but arises under specific prosodic conditions, . . .” (I&M2011:37)
2. Data
<table>
<thead>
<tr>
<th></th>
<th>σ containing penultimate µ</th>
<th>σ containing antepenultimate µ</th>
<th>σ containing fourth µ from the end</th>
<th>σ containing fifth µ</th>
<th>unaccented</th>
</tr>
</thead>
<tbody>
<tr>
<td>2µ</td>
<td>1σ  Kén, Yúu, Káí</td>
<td>∅</td>
<td>∅</td>
<td>∅</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2σ  Ríku, Sóra, Yúna, Sáki</td>
<td>∅</td>
<td>∅</td>
<td>∅</td>
<td></td>
</tr>
<tr>
<td>3µ</td>
<td>2σ  Yúuto, Tároo, Jíroo, Yúika, Míyuu</td>
<td>∅</td>
<td>∅</td>
<td>Ayumu, Takeru, Kazuo, Kazumi, Koharu, Nagisa, Kazue, Kazuyo</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3σ  Háruto, Yútaka, Kíyosi, Ákira Háruka, Másako</td>
<td>∅</td>
<td>∅</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4µ</td>
<td>2σ  Ryúusee</td>
<td></td>
<td>Koohee, Heezoo</td>
<td>Kanesaku</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3σ  Kisánji, Yúusuke</td>
<td></td>
<td>Kotaroo, Saburoo</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4σ  Takáhiro, Masátosi Hiróyuki</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5µ</td>
<td>3σ  Kóojiroo, Sínjiroo</td>
<td></td>
<td>Kootaroo, Sintaroo</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4σ  Akinósin, Saburóota</td>
<td>Sakútaroo, Ki-íchiroo</td>
<td>Sinnosuke</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5σ  Yosinosuke</td>
<td></td>
<td>Yosinosuke</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6µ</td>
<td>3σ  Seejuuroo</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>4σ  Sin-ichiroo</td>
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<tr>
<td></td>
<td>5σ  Chikara-tároo</td>
<td>Tama-sáburoo</td>
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</tr>
</tbody>
</table>
Gap between names and common nouns

- Japanese given names have a limited accent pattern(s) available, given that $n$-mora nouns potentially have $n+1$ accent patterns.
- Some names, adopted from general words, show different accent patterns.
  
<table>
<thead>
<tr>
<th>Japanese Name</th>
<th>vs.</th>
<th>Japanese Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>haná ‘flower’</td>
<td>vs.</td>
<td>Hána</td>
</tr>
<tr>
<td>kokóro ‘heart’</td>
<td>vs.</td>
<td>Kókoro</td>
</tr>
<tr>
<td>yuudai ‘grand’</td>
<td>vs.</td>
<td>Yúudai</td>
</tr>
<tr>
<td>tsubasa ‘wing’</td>
<td>vs.</td>
<td>Tsubasa</td>
</tr>
<tr>
<td>nozomi ‘hope’</td>
<td>vs.</td>
<td>Nozomi</td>
</tr>
<tr>
<td>yúuki ‘courage’</td>
<td>vs.</td>
<td>Yúuki</td>
</tr>
</tbody>
</table>

- The accent shift is not simply due to making contrasts.
Gap between names and common nouns

- Deverbal names (i.e. ending with -(C)u) are unaccented.
  
  shigéru ‘to prosper’ vs. Shigeru (unacc.)
  wataru ‘to cross’ (unacc.) vs. Wataru (unacc.)

- Names ending with some onomastic suffixes \{-e, -o, -ne, -mi, -yo, -ichi, -saku, -hee, -zoo, -nosuke\} are unaccented.

- Similar names have different accent patterns.
  
  Koo-taroo vs. Kóo-jiroo vs. Sakú-taroo vs. Sakú-jiroo

- Longer (6+ morae) names behave differently from shorter (5 or less morae) names.
  
  Ko-taroo, Koo-taroo, Sakú-taroo vs.
  Chikara-tároo, Kyabetsu-tároo, Urutoraman-tároo etc.
What constitute the category ‘given names’

Given names
- Derived names
  - from verb
  - from noun
  - from adjective
- Non-derived names
  - arbitrary
  - name-specific suffix
    - acc
    - unacc
- Compounding
Summary: Data

- **Only limited accent patterns** are available, as opposed to common nouns.

- **No Accent on Last two morae** are found, while common nouns allow final or penult accent.

- **Certain endings make names unaccented.**
  - e.g. $\sigma\sigma(C)u$ (verb-derived)
  - $\sigma\sigma \{ -e, -o, -ne, -mi, -yo, -ichi, -saku, -hee, -zoo, -nosuke \}$

- **Similar -roo names have different accent patterns**

- **Longer names behave differently from shorter names**
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4. Conclusions

Half way done!
3. Analysis
Analysis

- **Constraints**

  - **FallBetweenLong\(\sigma\)**: If accenting a long syllable, accent must be on the first mora of the two.
  - **ExtendedNonFinality**: Do not put accent on word-final or last two morae.
  - **Unaccented\(_{LEX-1}\)**: Make names unaccented when this suffix is present.
  - **NoFallBeforeSuf\(_{LEX-2}\)**: Do not put accent immediately preceding this suffix.
  - **InitialRise\(_{LEX-2}\)**: Must have initial rise (i.e. no initial accent) when this suffix is present.
  - **Culminativity**: Must have one and the only one accent in a word.
  - **FinalLapse**: Do not have unaccented sequence word finally (counting morae).
Analysis

- **Lex-1 set (unambiguously unaccented)**
  \[ \sigma \sigma \{-e, -o, -ne, -mi, -yo, -ichi, -saku, -hee, -zoo, -nosuke\} \]

- **Lex-2 set (for -roo names)**
  For the most cases: \{-roo\} for both constraints
  1-syllable 2-mora + \( \mu_{\text{roo}} \):
  \[ \text{NOFALLSUF}_{\text{LEX-2}} \{-\text{roo}\} \]
  \[ \text{INITIALRISE}_{\text{LEX-2}} \{-\text{C[-voice]roo}\} \]

- **Ranking**
  \[ \text{FALLLONG} \sigma \gg \text{UNACC}_{\text{LEX1}}, \text{NOFALL}_{\text{LEX2}}, \text{IR}_{\text{LEX2}} \gg \text{EXNF} \gg \text{CULM} \gg \ast \text{FINLAP} \]
  L undominated constraint
## Analysis

**Culm, ExNF >> *FinLapse**

<table>
<thead>
<tr>
<th>/kisanji/</th>
<th>FallLongσ</th>
<th>Culm,</th>
<th>ExNF</th>
<th>*FinLapse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kí sanji</td>
<td></td>
<td></td>
<td></td>
<td>**!</td>
</tr>
<tr>
<td>&gt;Kísan' nji</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Kisan’ ji</td>
<td>*!</td>
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<td>*</td>
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<tr>
<td>Kisanjí</td>
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<td>*!</td>
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<tr>
<td>Kisanji</td>
<td></td>
<td></td>
<td>*!</td>
<td>***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>/akinosin/</th>
<th>FallLongσ</th>
<th>Culm,</th>
<th>ExNF</th>
<th>*FinLapse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Á kinosin</td>
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<td>***!</td>
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<tr>
<td>Akí nosin</td>
<td></td>
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<td></td>
<td>**!</td>
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<tr>
<td>&gt;Akinó sin</td>
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<td>Akinosí n</td>
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<td>*!</td>
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<td>Akinosin’</td>
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<td></td>
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<tr>
<td>A kinosin</td>
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<td></td>
<td>*!</td>
<td>****</td>
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</table>
## Analysis -Lexical constraints-

<table>
<thead>
<tr>
<th>/ko-taroo/</th>
<th>FallLongσ</th>
<th>InitialRise Lex{-roo}</th>
<th>NoFall Lex{-roo}</th>
<th>ExNF</th>
<th>Culm</th>
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<td>Kó-taroo</td>
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<td>Ko-tároo</td>
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<td>Ko-taróó</td>
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<td>*!</td>
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<tr>
<td>Ko-taroó</td>
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<td>*</td>
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<tr>
<td>&gt;Ko-taroo</td>
<td></td>
<td></td>
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<td>*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>/kanesaku/</th>
<th>Unacc Lex {-saku}</th>
<th>Culm</th>
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</thead>
<tbody>
<tr>
<td>Ká nesaku</td>
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<td></td>
</tr>
<tr>
<td>Kané saku</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>Kanesá ku</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>Kanesakú</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>&gt;Kanesaku</td>
<td></td>
<td>*</td>
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</tbody>
</table>
## Analysis

**ExNF >> Culm**

<table>
<thead>
<tr>
<th>/koo-taroo/</th>
<th>FallLong</th>
<th>InitialRise</th>
<th>NoFall</th>
<th>ExNF</th>
<th>Culm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lex{-taroo, -siroo}</td>
<td>Lex{-roo}</td>
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<tr>
<td>Kóo-taroo</td>
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<tr>
<td>Koó-taroo</td>
<td>*!</td>
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<tr>
<td>Koo-tároo</td>
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<tr>
<td>Koo-taráo</td>
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<td>Koo-taroó</td>
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<td>*!</td>
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<td></td>
</tr>
<tr>
<td>&gt;Koo-taroo</td>
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<td>*!</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>/koo-jiroo/</th>
<th>FallLong</th>
<th>InitialRise</th>
<th>NoFall</th>
<th>ExNF</th>
<th>Culm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lex{-taroo, -siroo}</td>
<td>Lex{-roo}</td>
<td></td>
<td></td>
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<tr>
<td>&gt;Kóo-jiroo</td>
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<tr>
<td>Koó-jiroo</td>
<td>*!</td>
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<tr>
<td>Koo-jiroo</td>
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<tr>
<td>Koo-jiróo</td>
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<td>*!</td>
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<tr>
<td>Koo-jiroó</td>
<td>*!</td>
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<tr>
<td>Koo-jiroo</td>
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<td>*!</td>
</tr>
</tbody>
</table>
Only limited accent patterns are available, as opposed to common nouns.

No Accent on Last two morae

Common nouns allow final or penult accent.

Certain endings make names unaccented. But why?

- e.g. σσ(C)u (verb-derived)
  - σσ { -e, -o, -ne, -mi, -yo, -ichi, -saku, -hee, -zoo, -nosuke }

Similar -roo names have different accent patterns But why?

- Longer names behave differently from shorter names
Deverbal names = unaccented

• Sato (1993)
  Deverbal nouns (i.e., not names) tend to be unaccented. According to him, 20% of the unaccented 3-mora nouns originate from verb and 30% of the unaccented 4-mora nouns originate from verb.

  kataru (to talk, v.) vs. katari (n.)
  chi ‘blood’ + tomeru (to stop, v.) vs. chi-dome (n.)
  hara ‘stomach’ + hau (to crawl, v.) vs. hara-bai (n.)
  tsuyu ‘rainy season’ + akeru (open, v.) vs. tsuyu-ake (n.)

• My proposal: *ACCENT\text{DEVERBAL} for deverbal names.

Now I would like to point out that deadjectival names are accented.
Deadjectival names = accented

Deverbal

shigér-u ‘to prosper’ vs. Shigeru (unacc.)
watar-u ‘to cross’ (unacc.) vs. Wataru (unacc.)
manab-u ‘to study’ (unacc.) vs. Manabu (unacc.)

Deadjectival

kiyó-i ‘clean’ vs. Kiyoshi
 taká-i ‘high’ vs. Tákashi
tadashí-i ‘right’ vs. Tádashi

• The accentual position is different from what the adjectival bases have, the names obeys the given name rules.

• The feature [+Accent] that the adjectival base has is maintained when it becomes a name.

• The location of the accent is an emergent property.
Deadjectival names = accented

Deverbal

- shigé-r-u ‘to prosper’ vs. Shigeru (unacc.)
- watar-r-u ‘to cross’ (unacc.) vs. Wataru (unacc.)
- manab-u ‘to study’ (unacc.) vs. Manabu (unacc.)

Deadjectival

- kiyó-i ‘clean’ vs. Kíyoshi
- taká-i ‘high’ vs. Tákashi
- tadasí-i ‘right’ vs. Tádashi

- Why isn’t the feature preservation found in **deverbal** cases?
- Note that the deverbal base ends with a consonant, which cannot stand alone in Japanese, while the deadjectival base ends with a vowel.
- This might be the reason why deverbal and deadjectival names behave differently. Now let’s look at denominal cases.
Some denominal names = unaccented

Denominal

makoto ‘truth’ vs. Makoto

Tsubasa ‘wing’ vs. Tsubasa

hikari ‘light’ vs. Hikari

minorí ‘fruit, good results’ vs. Minori

Kokóro ‘heart’ vs. Kókoro

tsúbaki ‘camellia’ vs. Tsúbaki

• Denominal names are faithful to [± Accent] of base.

• Nominal bases with a word-final accent are regarded as having [-Accent] feature, because they sound exactly the same as unaccented counterparts.

• Overall, the location of the accent is subject to the given-name-specific rules.
### -roo names

<table>
<thead>
<tr>
<th></th>
<th>-taroo, -siroo</th>
<th>-jiroo, -goroo</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Unaffixed</td>
<td>σ] σ</td>
<td>σ] σ</td>
</tr>
<tr>
<td>(ii) 1 syll 1 mora (e.g. Ko[taroo)</td>
<td>σ σ σ</td>
<td>σ σ σ</td>
</tr>
<tr>
<td>(iii) 1 syll 2 mora (e.g. Ko[otaroo, Ko[ojiroo)</td>
<td>σ σ σ</td>
<td>σ] σ σ</td>
</tr>
<tr>
<td>(iv) 2 syll 2 mora (e.g. Sa[ku]taroo)</td>
<td>σ σ] σ σ</td>
<td>σ σ] σ σ</td>
</tr>
<tr>
<td>(v) 2 syll 3 mora (e.g. Ka[rec-ta]roo)*</td>
<td>σ σ σ] σ</td>
<td>σ σ σ] σ</td>
</tr>
<tr>
<td>(vi) 3 syll 3 mora (e.g. Chi[kara-ta]roo)</td>
<td>σ σ σ] σ</td>
<td>σ σ σ σ] σ</td>
</tr>
<tr>
<td>(vii) 4 syll 4 mora (or more) (e.g. U[rutoraman-ta]roo)*</td>
<td>σ σ σ σ] σ</td>
<td>σ σ σ σ σ] σ</td>
</tr>
</tbody>
</table>

(ii)-(iv): Non-derived names
(v)-(vii): Compounding

*: They are imaginary/character names.
-roo names

• Why different behavior between -taroo and -jiroo?

Kubozono (1998) points out the difference, but leaves the pattern unsolved; accent is expected to happen before [−voice] rather than [+voice].

- taroo  - jiroo

1syll 1mora  σ σ σ  σ  σ σ

1syll 2mora  σ σ σ  σ ]σ σ

2syll 2mora  σ ]σ σ  σ σ ]σ σ

1σ 2µ element behaves like 1σ 1µ before [−voice]

1σ 2µ element behaves like 2σ 2µ before [+voice]

I argue that the feature [±voice] has an effect on the duration of the preceding vowel (cf. Warner and Arai (2001)).
Only limited accent patterns are available, as opposed to common nouns.

No Accent on Last two morae
Common nouns allow final or penult accent.

Certain endings make names unaccented. But why?

- e.g. σσ(C)u (verb-derived)
  - σσ {-e, -o, -ne, -mi, -yo, -ichi, -saku, -hee, -zoo, -nosuke}

Similar -roo names have different accent patterns But why?
  - Longer names behave differently from shorter names

Why do they make names unaccented? – I’ll leave this open.
Longer -roo names

- 3-or-more-mora + taroo/jiroo ⇒ Compound!

**Compound (N₁ N₂) accent rule**

(Simplified and extracted from Tanaka & Kubozono 1998, Kubozono 2008)

If N₂ is three morae long or longer, a compound noun accent falls on the initial syllable of N₂.

keitai ‘portable’ + denwa ‘phone’ ⇒ keitai-dénwa ‘cell phone’
higasi ‘east’ + Oosaka ‘Osaka’ ⇒ higasi-Óosaka

chikará ‘power’ + tároo ⇒ Chikara-tároo
tama ‘ball, gem’ + saburoo ⇒ Tama-sáburoo
shín ‘new’ + ichiroo ⇒ Shin-íchiroo
Longer -roo names

- Why are longer names special?
  - Longer names are not perceived as names!

Our data shows that shorter names, with 2, 3, 4 (and 5) morae, comprise 99% of the popular names. Longer names do not follow the name specific rules: they are subject to the compound noun rule.
Outline

1. General Characteristics of Tokyo Japanese
2. Data
   - Gap between Given Names and Common Nouns
   - What Constitute the Category ‘Given Names’
   - When Are Names Unaccented?
3. Analysis
   - Non-derived Names
   - Derived Names
   - Names ending with -roo
   - Longer names as compound
4. Conclusions
Conclusions

- Given names are accented in the default case.
- Some onomastic (i.e. name-specific) suffixes have a deaccenting effect (e.g. Táke-to vs. Take-o)
- Deverbal names do not maintain the feature [±Accent]
- Deadjectival, denominal names maintain [±Accent]
- Voicing has an effect on vowel duration: the vowel is longer before [+voice] than before [-voice]; this results in the accentual consequences in Koo-taroo vs. Kóo-jiroo
- Longer names are analyzed as compounds and follow the compound noun rule.