The 10 tonemes of Ticuna, an Amazonian oddity

MAIN CLAIM

San Martín de Amacayacu Ticuna (isolate (?), Western Amazonia) features:

• 10 tonemes in stressed syllables
• 5 tonemes in unstressed syllables

→ claim as to phonological (NOT just phonetic) units
→ typologically rare, areally unique

INTRODUCTION

Language
**SOME PHONOLOGICAL BACKGROUND**

**Structure of SMAT syllable**

+ demarcative stress (1st syllable of independent morphemes)

**ANALYSIS**

**STRESSED SYLLABLES**

**Phonetic sample A**

- **pa;36** = ta⁴ to.cling=FUT ‘to cling at so’s liver’
- **tu;52** = ta⁴ to.drag=FUT ‘to drag (fut.)’
- **pa;43** = ta⁴ to.be.dry=FUT ‘to be dry (fut.)’
- **pa;34** = ta⁴ to.be.nubile=FUT ‘to be nubile (fut.)’
- **?u;33** = ta⁴ to.say=FUT ‘to say (fut.)’
- **?a;31** = ta⁴ to.burn=FUT ‘to burn (fut.)’
- **ka;22** = ta⁴ to.stab=FUT ‘to stab (fut.)’
- **pa;21** = ta⁴ to.be.tired=FUT ‘to be tired (fut.)’
- **pa;21** = ta⁴ to.cling=FUT ‘to cling (fut.)’

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**Graphs showing frequency over time**

- Graph 1: Frequency (Hz) vs. Time (seconds)
- Graph 2: Frequency (Hz) vs. Time (seconds)
Phonetic sample B

\[ \text{tca}^3=\text{n}^3= \quad \text{ŋo};^{36} \quad -\text{ka}^1 \quad 1\text{sg}=3=\text{to.bite-liver} \quad \text{‘I bite its liver’} \]
\[ \text{tca}^3=\text{n}^3= \quad \text{tu};^{52} \quad =\text{ta}^1 \quad 1\text{sg}=3=\text{to.drag-too} \quad \text{‘I drag it too’} \]
\[ \text{tca}^3=\text{n}^3= \quad \text{mū};^{34} \quad =\text{ta}^1 \quad 1\text{sg}=3=\text{to.encircle-too} \quad \text{‘I encircle it too’} \]
\[ \text{tca}^3=\text{n}^3= \quad \text{mū};^{33} \quad =\text{ta}^1 \quad 1\text{sg}=3=\text{to.weave-too} \quad \text{‘I weave it too’} \]
\[ \text{tca}^3=\text{n}^3= \quad \text{mū};^{31} \quad =\text{ta}^1 \quad 1\text{sg}=3=\text{to.harpoon-too} \quad \text{‘I harpoon it too’} \]
\[ \text{tca}^3=\text{n}^3= \quad \text{mū};^{22} \quad =\text{ta}^1 \quad 1\text{sg}=3=\text{to.free-too} \quad \text{‘I free it too’} \]
\[ \text{tca}^3=\text{n}^3= \quad \text{ŋa};^{21} \quad =\text{ta}^1 \quad 1\text{sg}=3=\text{to.scold-too} \quad \text{‘I scold it too’} \]
\[ \text{tca}^3=\text{n}^3= \quad \text{mū}; \quad =\text{ta}^1 \quad 1\text{sg}=3=\text{to.eat-too} \quad \text{‘I eat it too’} \]
\[ \text{tca}^3=\text{n}^3= \quad \text{ʔur};^{43} \quad =\text{ta}^1 \quad 1\text{sg}=3=\text{to.boil-too} \quad \text{‘I boil it too’} \]

σ-initial vs σ-final creaky-voice-ness (in conservative varieties)
Sets of tonal minimal pairs

<table>
<thead>
<tr>
<th>Segments</th>
<th>36</th>
<th>52</th>
<th>34</th>
<th>43</th>
<th>33</th>
<th>31</th>
<th>22</th>
<th>21</th>
<th>t.creaky:voice</th>
<th>t.creaky:voice</th>
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</thead>
<tbody>
<tr>
<td>pa</td>
<td>'to be full'</td>
<td>'to be dry'</td>
<td>'dad l'</td>
<td>'to be tired'</td>
<td>'to cling on'</td>
<td></td>
<td></td>
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<tr>
<td>mà</td>
<td>'to chop up'</td>
<td>'to be sad'</td>
<td>'mum l'</td>
<td>'to sprout'</td>
<td>'to kill'</td>
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<td></td>
<td></td>
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<tr>
<td>mū</td>
<td>'to be numerous'</td>
<td>'to weave'</td>
<td>'to spear'</td>
<td>'to send'</td>
<td>'to eat (a fruit)'</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>ù</td>
<td>'to plant'</td>
<td>'to fetch'</td>
<td>'to sit'</td>
<td>'other'</td>
<td>'kinkajou'</td>
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<tr>
<td>tū</td>
<td>'to drag'</td>
<td>'to perch'</td>
<td>'to choke'</td>
<td>'tree sp.'</td>
<td>'to tie'</td>
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<tr>
<td>nəj</td>
<td>'other'</td>
<td>'to be hot'</td>
<td>'to be spicy'</td>
<td>'tree'</td>
<td>'other'</td>
<td>'to tie'</td>
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<td>təi</td>
<td>'to stand'</td>
<td>'to chew'</td>
<td>'to be tasty'</td>
<td>'tree sp.'</td>
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<td>'to open'</td>
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<tr>
<td>təq</td>
<td>'to hang'</td>
<td>'to stay'</td>
<td>'to arrive'</td>
<td>'to fall'</td>
<td>'tree sp.'</td>
<td>'to ferment'</td>
<td>'to learn'</td>
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<tr>
<td>nə</td>
<td>'owl sp.'</td>
<td>'to vanish'</td>
<td>'to die (a fire)'</td>
<td>'to be lazy'</td>
<td>'to fruit'</td>
<td>'to be wounded'</td>
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### ANALYSIS

**UNSTRESSED SYLLABLES**

**Phonetic sample**

pe₃₃? -wa⁵ 'at you (pl.)'
pe₃₃? -te⁴ 'your (pl.) husband'
pe₃₃ -mā³ 'your (pl.) path'
pe₃₃ -ga¹ 'your (pl.) rib'

təau₂¹ -pa ‘my skirt’

### Sets of tonal minimal pairs

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<tr>
<th>Segments</th>
<th>5</th>
<th>4</th>
<th>3</th>
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<td>nā</td>
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<td>3CLASSII-V=</td>
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<td>ʔuʔi</td>
<td>-BEN</td>
<td>-NMLZ.cIV</td>
<td>-ACC</td>
<td>-TRANSFORMATIVE</td>
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<tr>
<td>i</td>
<td>PROG=</td>
<td>PRED.CLASS²=</td>
<td>PRED.CLASS³=</td>
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CONCLUSION

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<th>Toneme inventory</th>
<th>in stressed syllables</th>
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References


