



Question intonation in Fataluku



Fataluku
Language
Project

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Overview

- Fataluku
- Statements vs. questions
- Word prosody vs. sentence prosody
- Pitch
- Duration

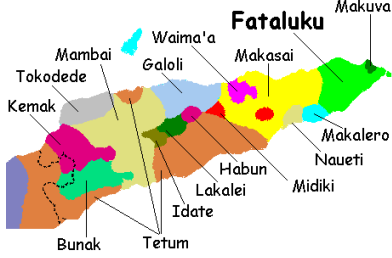
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Fataluku

- Spoken in the Lautem district of East Timor
- non-Austronesian / Papuan
- About 30,000 speakers
- No voiced stops
- Object - Verb order

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East Timor language map



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How to form questions?

- Question word
- Question tag
- Question particle
- Intonation only

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Question words

• ina	‘what’
• umani	‘who’
• tarupaha	‘how many’
• tarute	‘when’
• te na’e	‘where’
• te mara	‘where to’
• te va’ane	‘how’

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Question words

a ina fa'i ?
 you what do
 'What are you doing?'

e moco tarupaha atere ?
 your children how.many person
 'How many children do you have?'

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Question tag

tava la'a le mara.
 he go house to
 'He is going home.'

tava la'a le mara ana upe ?
 he go house to or not
 'Is he going home?'

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Question particles

tava la'a le mara la ?
 he go house to Q
 'Is he going home?'

tava la'a le mara nani ?
 he go house to Q
 'Is he going home?'

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Intonation only

tava la'a le mara ?
 he go house to
 'Is he going home?'

- What is the difference between statements and questions that use the same words?

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Word prosody

- Fataluku words have an accent / High tone associated with the 1st or 2nd syllable

arapou	'buffalo'	[a.RA.pou]
kareta	'car'	[KA.re.ta]
tapule	'to buy'	[ta.PU.le]
nucece	'to bathe'	[NU.ce.ce]

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Accent vs. tone

- This seems to be similar to word accent in Manado or Kupang Malay, but it is not
 - puru 'stomach' [PU.ru]
 - lala 'tired' [la.LA]
- In Manado Malay, the accent can be a H tone (in a statement) or a L tone (in a question)
- In Fataluku, the 'accent' is always a H tone

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Manado Malay

- Statement:

H* L

dia so pulang. [PU.lang]
- Question:

L* H

dia so pulang ? [PU.lang]

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- In Fataluku, a H tone is used on the 'accented' syllable, both in statements and questions
- So we don't need the notion of 'accent'
- All full words have a lexical H tone (associated with the 1st or 2nd syllable)
- Some clitics have a H tone

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Phrase prosody

- The lexical H tone is deleted in certain contexts
- A phonological phrase consists of a single word or compound, possibly with pre-clitics or post-clitics
- Only the first H tone of a phonological phrase is realized:
 - a kareta 'my car' [a.KA.re.ta]
 - i kareta 'his car' [I.ka.re.ta]

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Sentence prosody

- Statements and questions are distinguished by sentence prosody
- Questions have a H tone associated with the last syllable, which is absent in statements
- This may appear to be similar to the 'question rise' in languages such as English or Malay, but it is not

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Language comparison

1. In Fataluku, there is no final rise. The final H tone of questions is associated with a syllable (like a lexical H tone), not with a sentence boundary (as in Manado Malay)
2. In Fataluku, the distinction between a statement and a question is limited to the last syllable of the sentence (there is no change in accent).

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H

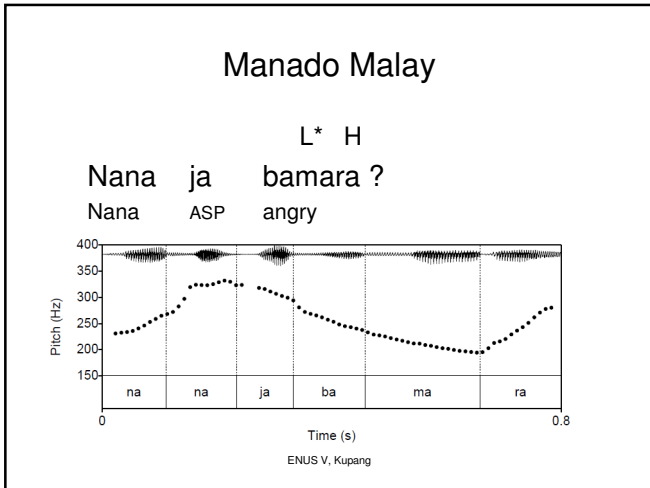
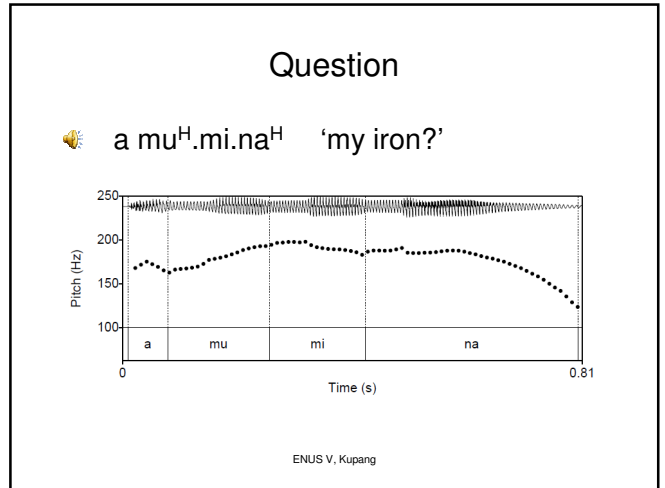
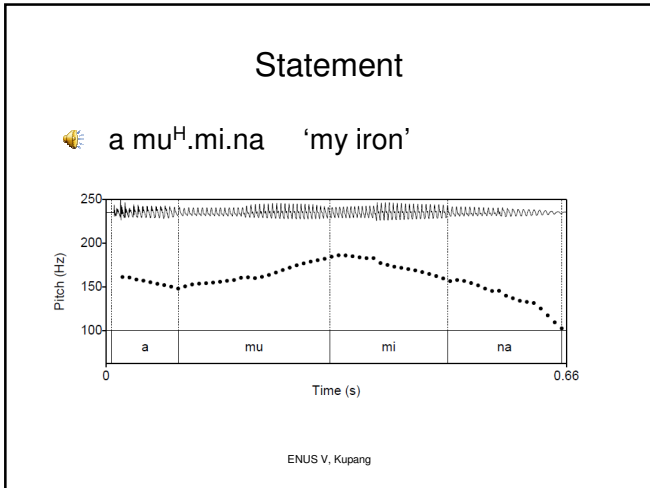
a mumina 'my (thing made of) iron'

H H

a mumina ? 'my iron ?'

- In Fataluku, phrase tones are independent of sentence prosody

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Questions vs. statements

- The difference between questions and statements is not limited to pitch. Two other major differences are
 - vowel reduction in statements
 - final lengthening in questions

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Experiment

- Goal: study difference in duration of statements and questions
- Materials: 10 statements and 10 questions with the same words. Each sentence is read twice
- Subjects: native speakers of Fataluku

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Example (1)

🔊 tava leura hai lama-lama.
3SG meat ASP cut
'She already cut the meat.'

🔊 tava leura hai lama-lama ?
3SG meat ASP cut
'Did she already cut the meat?'

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Example (2)

☀ tavar hai helere.
3PL ASP run.PL
'They are running.'

☀ tavar hai helere ?
3PL ASP run.PL
'Are they running?'

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Results

- Some sentences are longer than others, because they use different words, so we measure relative duration.

$$\text{relative duration} = \frac{\text{duration of question}}{\text{duration of statement}}$$

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Total duration

- Mean relative duration of whole sentence:

$$\text{question} = 1.16 * \text{statement}$$

- So questions are a bit longer than statements

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Duration of final syllable

- Mean relative duration of final syllable:

$$\text{question} = 3.04 * \text{statement}$$

- So the final syllable of questions is much longer than the final syllable of statements

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Duration of non-final syllables

- Mean relative duration of the whole sentence except the final syllable:

$$\text{question} = 0.93 * \text{statement}$$

- So non-final syllables are actually shorter in questions than in statements

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Conclusion of experiment

- Questions are on average longer than statements, but this is due only to the final syllable.
- The final syllable is about 3 times longer in questions than in statements
- Questions are somewhat shorter than statements if we exclude the final syllable

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Language comparison

- Van Heuven and van Zanten (2005) found that questions are spoken faster than corresponding statements
- In Fataluku, it is statements that are spoken faster, but this is due only to the last syllable. Without the last syllable, questions are spoken faster than statements

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Question words

- In Manado Malay, question words have a distinctive accent (H*L), and do not have a final rise
- In Fataluku, the same intonation pattern is used for yes-no questions and question-word questions
 - le mara ? '(are you) going home?'
 - te mara ? 'where (are you) going?'

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Conclusion

- Distinction between questions and statements in Fataluku is mainly due to the last syllable
- This syllable has a H tone in questions and no tone in statements
- The last syllable is lengthened in questions and reduced in statements

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