

Malay meets Chinese meets English

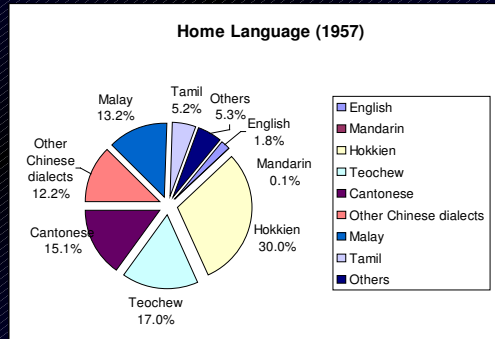
Where does Colloquial Singaporean
English word-level tone come from?

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I'm looking at a sort of three-way contact situation in Singapore, between Chinese, Malay and English. But the work I'm actually presenting is a pilot phonetic experiment on Malay and English.

Colloquial Singaporean English (CSE)



(Kuo 1980: 41)

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First, Singapore's very small - only about 4 million people. We were colonized by the British in 1819. The indigenous people are Malay. We have a small Indian minority, but the vast majority are from China, the southern coastline. Nowadays English is the main home language for nearly a quarter of the population. But of course, it's not British English. Singaporeans call it "Singlish". Since I'm talking about the basilectal/mesolectal variety, I'll use the formal term Colloquial Singaporean English (CSE).

CSE Tone

- Wee (to appear), Siraj (p.c. 2008) and myself:
 - **H**: *ínk, cóol, sée*
 - **L (H)**: *in (schóol), the (láv), your (háir)*
 - **MH**: *téa.cher, rú.nning, únder*
 - **LH**: *a.róund, re.céive, di.scúss*
 - **MMH**: *Síng.a.pore, é.le.phant, má.na.ging*
 - **LMH**: *bi.lín.gual, hi.bí.scus, re.mái.ning*
 - **LMMH**: *se.cú.rity, re.spón.sible, i.rrá.tional*
 - **MH !MH**: *móneylénder, mótorcýcle, cólour pécil*

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- In the past couple of years, Wee Lian Hee, Pasha Siraj and myself have all proposed independently that CSE has tone in addition to stress. Wee and I agree perfectly on how we transcribe tone, Siraj is very close. So in this presentation, LMH means low mid high, and all the accent marks refer to stress.
- READ OUT (MMH: Siraj transcribes comprehend and emerald as MHH)
- Now I also argue that tone is predictable from stress. If you look at this data, you'll find that all the words with a given tone pattern have the same stress pattern as well. Morphology also plays a role, but in today's data you just have to remember that compound words act like two separate words with downstep in between.
- Now, notable features of this system:

Features of CSE tone

- H-final prosodic word
 - H, MH, MMH, L (H), LMH, LMMH
- Stress prefers higher pitch
 - H doesn't become super-high: (MH) H
 - L → M: MH, MMH, LMH, LMMH
- Default tone / Tone-filling
 - Copies previous when possible: MMH, LMMH
 - L elsewhere: L(H), LMH, LMMH

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Can be illustrated by the word unanimous

- The prosodic word is high-final.
- Stress seems to prefer higher pitch. It's quite happy to be high - it doesn't go to super-high. But you'll never get an stressed syllable with low tone - it always raises to mid.
- And according to Wee and me, but not Siraj or the findings of this experiment, unstressed syllables try to copy the previous tone within the prosodic word. If there's nothing to copy, they're assigned a sort of default low.

Where did it come from?

- Tone restrictions in Chinese (Min, Yue)?
 - Tone inventory: 3 level tones + ‘checked’ tones
- But some things remain unexplained:
 - Tone assignment completely different. CSE speakers reject *téacher* HL, *proféssor* LHL (Cheng 1968; Devonish 1989; Juffs 1990)
 - No high-final pattern in Chinese
 - No tone sandhi in CSE
- Intonation of Malay (via Bazaar Malay)?

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• Now the question is, where did this come from? Logically, you’d say, from a tonal substrate. The CSE tone inventory definitely is a subset of what’s available in southern Chinese dialects. You have three level tones, plus their ‘checked’ or glottalized versions. So high level would be ‘car’, and high checked would be ‘cut’.

• BUT there are at least three arguments against this. Firstly, mainland Chinese don’t say teacher MH, they say teacher HL. CSE has a high-final pattern that isn’t preferred in Chinese at all. And as an aside, southern Chinese dialects have extensive tone sandhi - that is tones changing depending on environment - and CSE doesn’t have this at all.

• So where else could it come from? Well, practically all Singaporeans used to speak Malay as well as their own home language. Specifically, a pidgin Malay called Pasar Melayu (Bazaar Malay)

Malay intonation

Phrase-final H

pó.cong ... 

L H
M

pe.náng.gal ... 

L L H
M

Utterance-final L

... pó.cong 

H L

... pe.náng.gal 

L H L

(Yong 1998; Lorentz 1997; Multilingual Spoken Corpus [Malay], COE 2004)

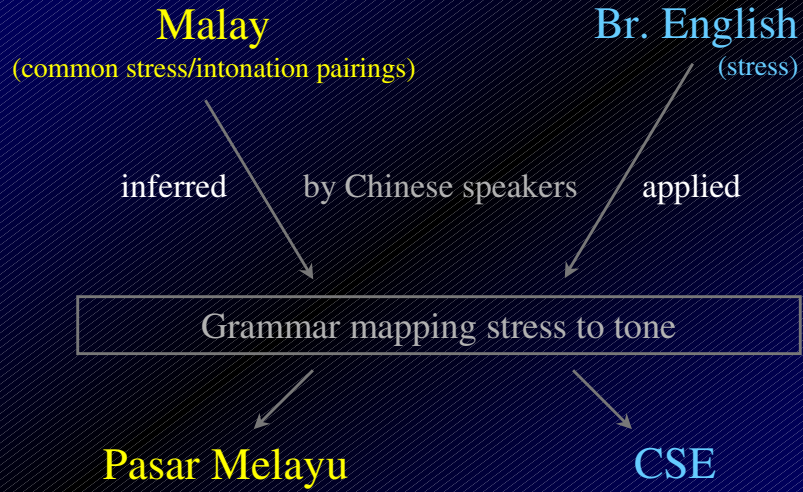
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- Quite often in Malay or Indonesian, you DO get a final high. I've seen one phonological description of this by Ove Lorentz, but all the phonetic work seems to be on the isolated citation form, which is quite different. Lorentz has analyzed these as the low utterance-final tone pushing the phrase-final high one syllable to the left, giving the impression of stress shift. So note that according to Lorentz, the high does not necessarily dock on the stressed syllable, just on the last or second-last (play the clips here)

- My idea is that Chinese learners probably thought the first intonation pattern was the basic one, because that's the one they couldn't explain by the speaker running out of breath.

Hypothesis



Experimental design: Target Words

Malay	Intonation	CSE
<i>nám</i>	H	<i>númb</i>
<i>náma</i>	MH	<i>nórmal</i>
<i>mìn<u>ú</u>m-an</i>	MMH	<i>mínimum</i>
<i>me-mámah</i>	LMH	<i>pneumónia</i>
<i>me-m<u>á</u>mah-ka<u>n</u></i>	LMMH	<i>unánimous</i>
<i>màna-mána</i>	MH MH	<i>móney mánia</i>

(Tendeloo 1901, Winstedt 1913, Halim 1981, Lorentz 1997; Yong 1998; Cohn & McCarthy 1998)

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- The vast majority of morphemes in Malay are trochees like nama.
- The trouble is, when I started this experiment I didn't realize there was a controversy about whether stress shift happened in suffixed forms. So the underlines are all the places that different fieldworkers have said that stress goes, but the actual accent marks show what I found. So that means we really couldn't compare Malay minuman and CSE minimum any more, but the other comparisons are valid.
- So my subjects were asked to pretend these were nice normal brand names.

Lily say what ah?

ALI say
cannot order Normal deliver from Katong one.
No standard.



This is what my subjects saw. I read the prompt before they replied.


Experimental design

CSE script (12 repetitions)

Prompt: <i>Lily say what ah?</i>		
Initial	<i>ALI say cannot</i>	<i>order. ___ deliver from Katong no standard one.</i>
Medial		<i>order ___ deliver from Katong one. No standard.</i>
Final		<i>order ___. Deliver from Katong one no standard.</i>

Experimental design

Malay script (12 repetitions)

Prompt: <i>Lily cakap apa?</i>		
Initial	<i>ALI cakap jangan</i> 	<i>order. ____ di Sungai Petani ada serangga.</i>
Medial		<i>order ____ di Sungai Petani. Ada serangga.</i>
Final		<i>order ____ Di Sungai Petani ada serangga.</i>

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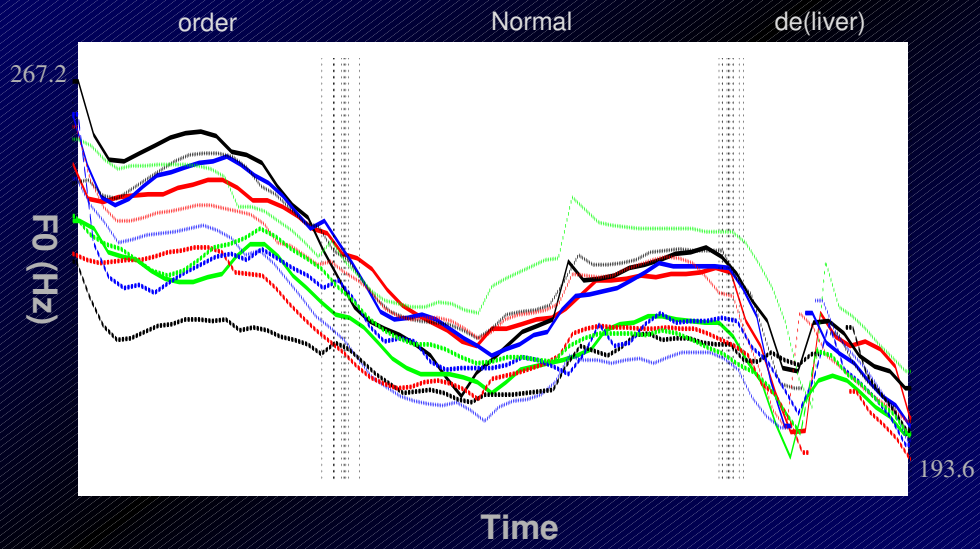
The environment is not perfectly controlled, because “order” has MH in CSE but may be either LL or LH in Malay.

The final case is the only one that has been done before.

Experimental design

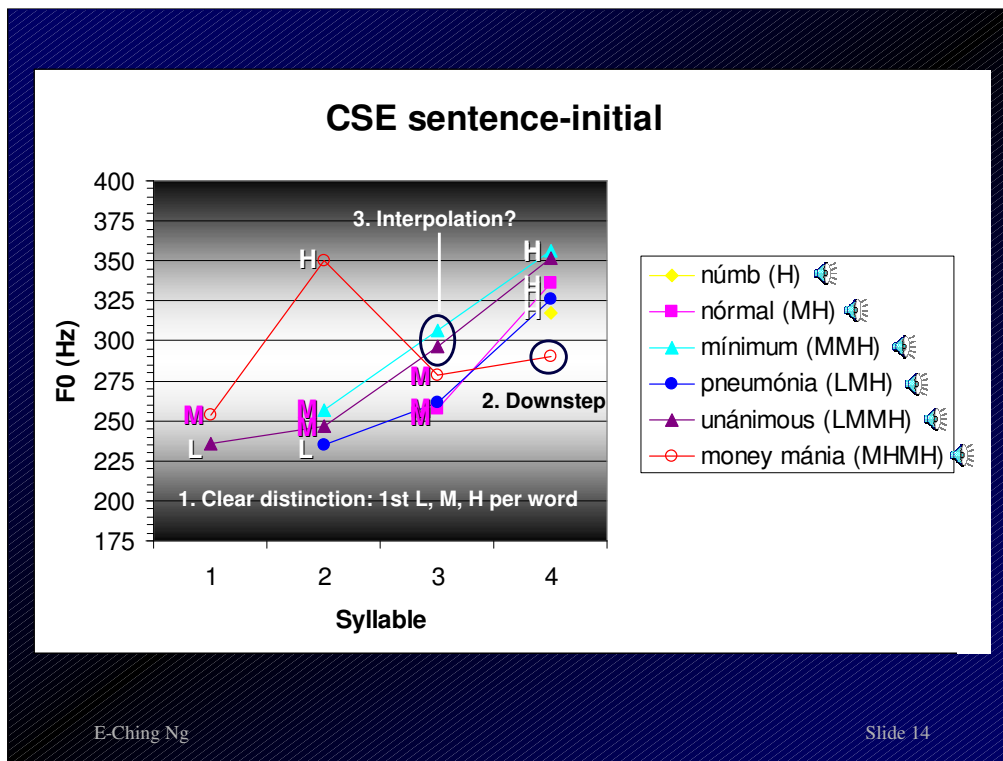
- **Subjects**
 - **Malay:** 1 Chinese Malaysian (19, female), lived in the US for one year
 - **CSE:** 1 Chinese Singaporean (20, female), lived in the UK for two years
- **Analysis**
 - Praat, Matlab (mean F0 for middle 50% of vowel)

normal (medial)



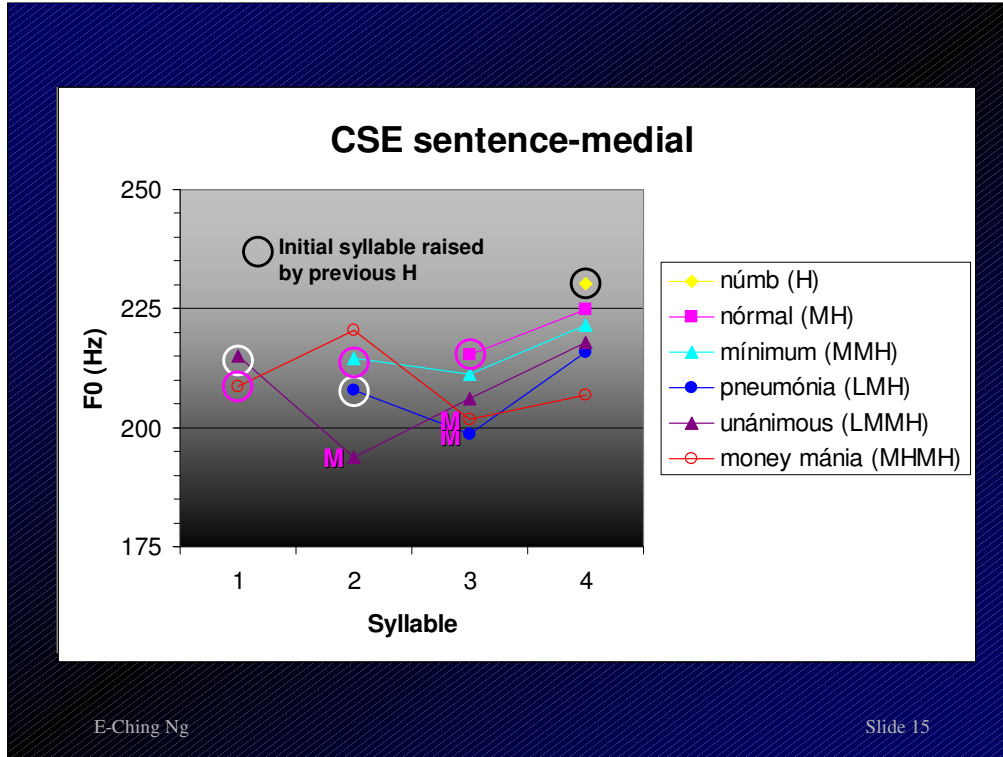
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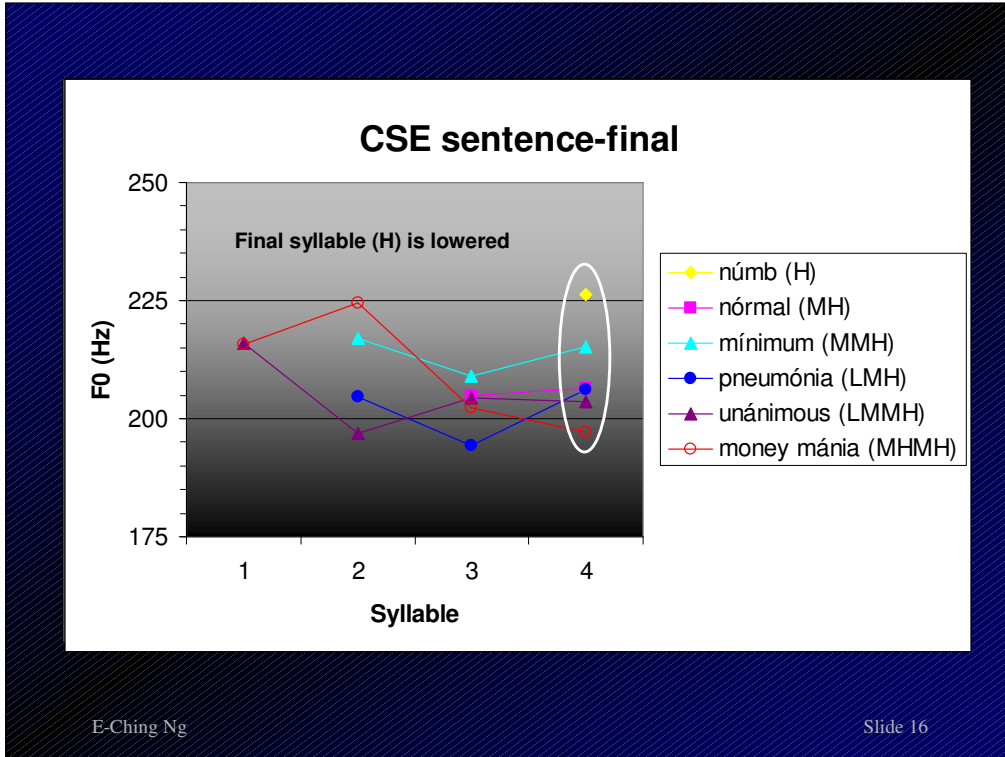


Range was about 182.5 Hz (final) to 387.1 Hz (initial)

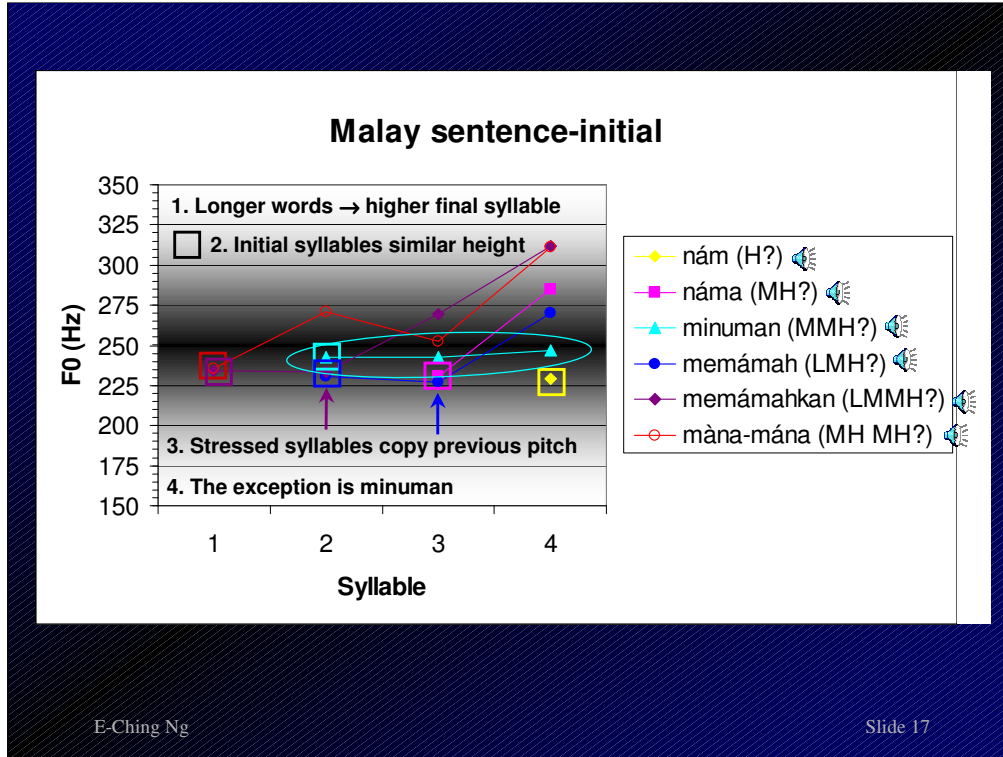
- The M's linked to stressed syllables match pretty well. Note that money MAnia (red) is not really an exception - influenced by preceding H.
- The L's are consistently a little lower than the M's.
- The H's are consistently very high.
- There are two interesting things though.
 - First, the final H in money mania (red) is quite low. This is not surprising given that my impressionistic transcription of compounds already included downstep (this is confirmed by the medial case).
 - Second, the impressionistic transcriptions gave us two M's in a row in miNiMum (turquoise) and unaNiMous (purple). Both produced by copying previous M. But the graph shows us that the phonetic reality for this speaker is more like an interpolation between M and H. The pitch contours show a pretty straight line from M to H. This would explain why Siraj transcribed words like minimum as MHH.



- Here, notice the massive interference from the preceding high tone.
 - Numb (yellow) is now very high, thanks to the previous high.
 - The initial mid tones (circled in shocking pink) are pulled up - remember that minimum (turquoise) and unanimous (purple) used to be exactly in parallel.
 - The initial low tone in Unanimous (purple) is now pretty high. In fact higher than the initial mid tones! This is very interesting and suggests that the low tone is a sort of default rest position which we drift towards, instead of a tone target we definitely aim for. But because of problems segmenting the vowel in this case, this is not a very reliable result.



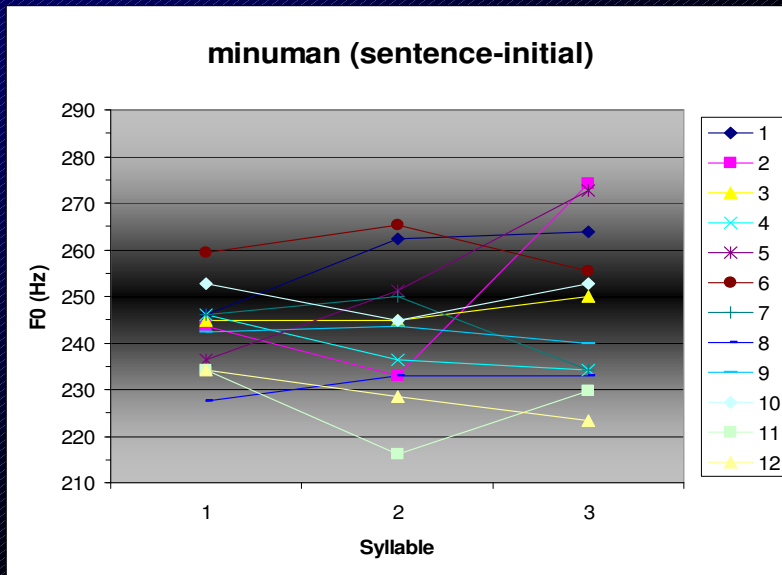
The high still seems to be operating here, it's just lower.



Range was about 162.7 Hz (final) to 353 Hz (medial).

Does not look like CSE, but there is order in the chaos. The basic pattern seems to be that

- roughly: the longer the word, the higher the final endpoint. There are two exceptions: nama (pink), which is higher than it is supposed to be, and minuman (turquoise) which is oddly flat.
- the initial syllables are all about the same height,
- if the second syllable is stressed, it stays on roughly the same pitch; otherwise it goes up. If you look at the purple line and the blue line. There is one exception to this, minuman (turquoise).



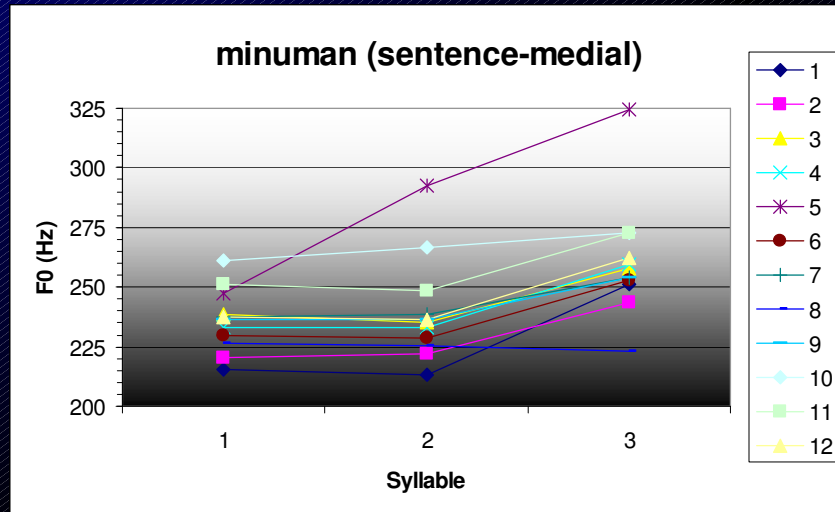
Can't conclude much from the sentence-initial means above, but ...

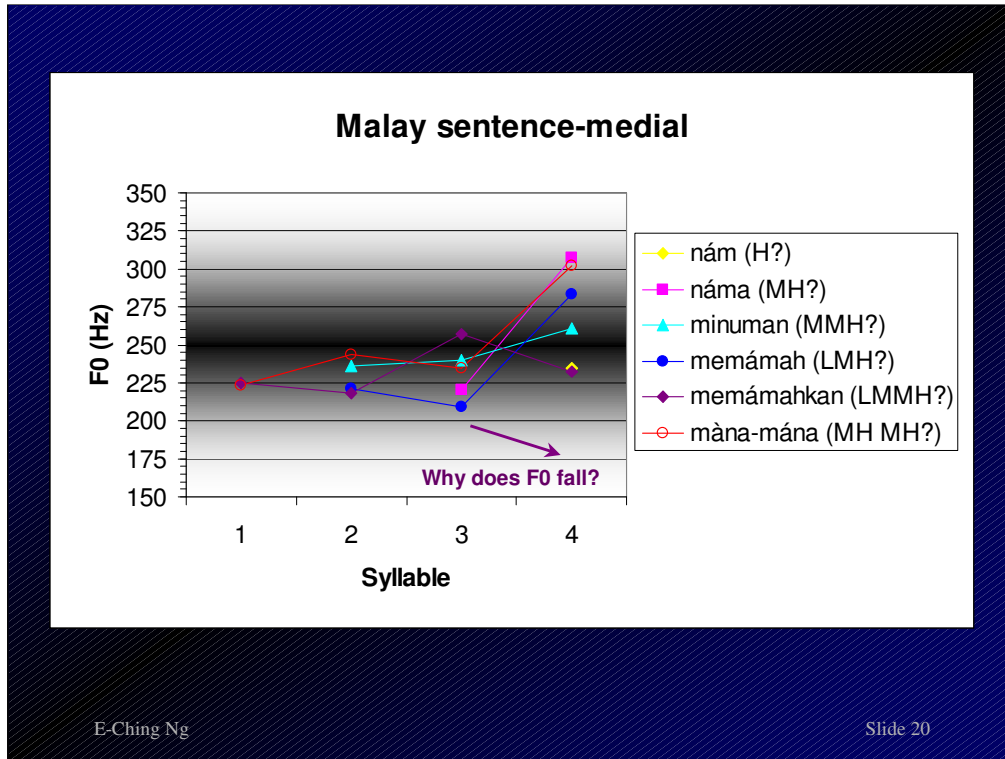
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But the individual utterances were NOT flat. They're all over the place. The top one goes up and come down, and the bottom one goes down and comes up.

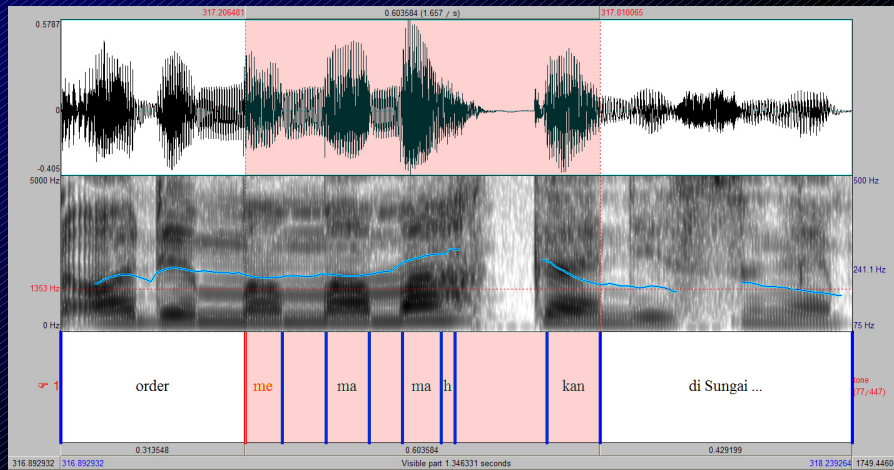
In medial case, stress seems to be minúman





This looks amazingly similar to the sentence-initial case except that minuman is better behaved, and the last syllable of memámahkan (purple) goes down instead of up.

memamahkan (medial)

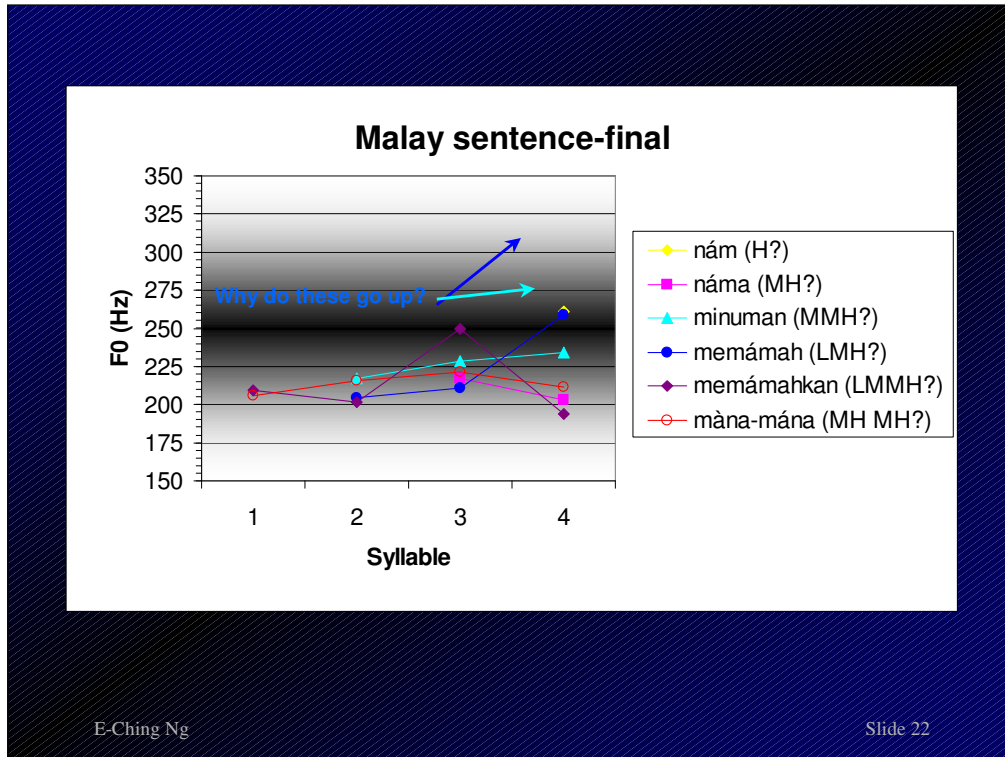


Pitch track confirms that the last syllable falls.
Because F0 rise anchors to end of stem, not circumfix?
But why would it do that?

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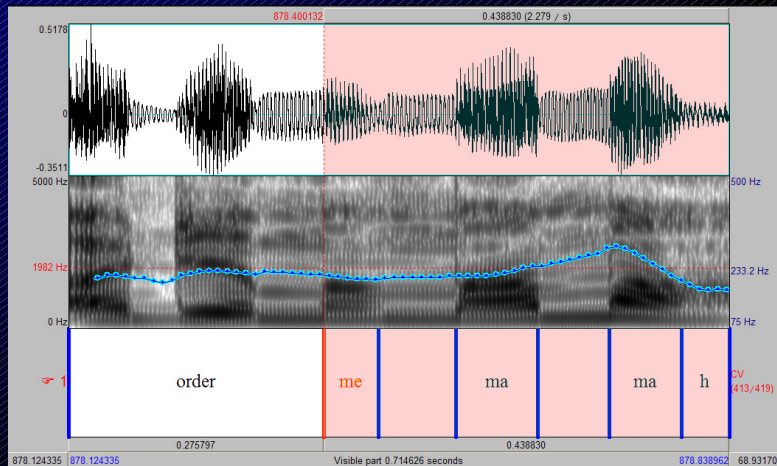
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No idea, unsolved problem. Suspect that /kan/ acts like a separate word and that maybe this medial case is not the exception - the initial case might have been the exception. Maybe we didn't see it because of measurement problems I will discuss later.



This one is a problem. We are surprised to see things going up at the end. Well, in the actual pitch tracks they are not going up. Let's zoom in on memámah.

memamah (final)



Conclusion: The final syllable is NOT rising in pitch. It sounds like L.
Different target word or method of measurement needed.

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Several possibilities:

- Maybe I shouldn't be excluding the coda from my pitch measurements.
- Should I try measuring tonal targets instead?
- At the very least I'll definitely change my target words to avoid the /h/ coda (menama and menamakan, maybe). May even switch to reiterant speech.

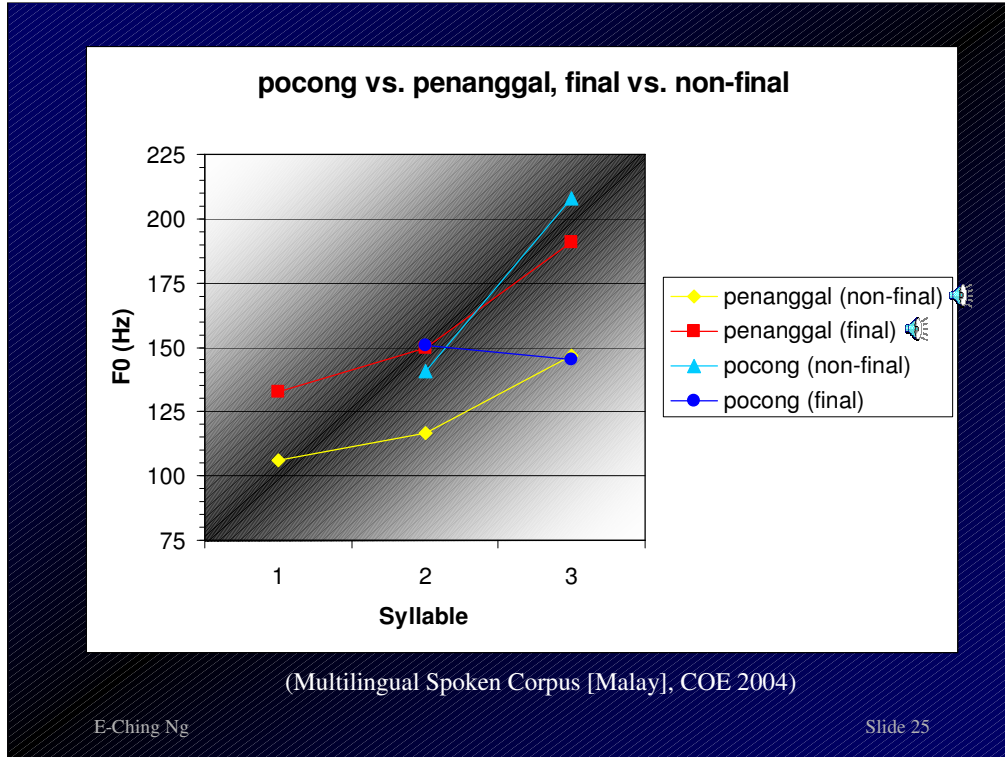
Summary of findings from pilot

- CSE word-final H ← Malay phrase-final H
 - very clear and consistent in *náma* / *nórmal*
- CSE default tone / tone-filling:
 - CSE low (rest position) ← Malay default low
 - CSE ‘copied’ tones NOT copied by this speaker. Interpolated, like Malay *memámahkan?*
- CSE stress causing pitch raising (L→M)
 - no clear antecedent in Malay lab data, but ...

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- Low (rest position): This is a tentative suggestion given the problems with measurement.
- Interpolated pitch on /mah/ in *memamahkan*: This is also a tentative suggestion, since we saw some problems with measurement of pitch during “ah”, so it’s not clear whether this conclusion is valid.
- No L->M in Malay: instead we get a very clear L, even clearer than unstressed syllables. The stress-tone relationship seems to be more like what Moira Yip describes for Chinese: stress causes more extreme tone rather than higher pitch. Hopefully this is because I had a Chinese Malaysian? Because as we see on the next slide ...



The Malay Malaysian speakers do seem to have L->M raising caused by the stressed syllable of penanggal.

Further work

- Is stress where F0 suggests, esp. *minúman*?
 - Consistent pattern for other correlates of stress?
- Are these speakers typical?
 - Malay memámahkan: fall (medial), rise (initial)?
 - Malay stress never realized as higher pitch?
 - CSE ‘copied’ tones interpolated or copied?
- Same results for other environments?
 - Malay phrase-final environment specifically?
 - CSE target word after L instead of H?

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And a lot more of other plans too, actually.

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Thank you!

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