Duration as a focus-marking device in Cantonese

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Introduction

Prosodic focus marking

- Focused elements are realized with increased pitch range, duration, and intensity. In many languages post focal compression (**PFC**) in pitch range and intensity is also found.
- Pitch is often considered as the primary focus-marking device in tone languages like Mandarin (Xu 2012; Kügler et al. 2020).

Focus marking in Cantonese

- Cantonese is a Chinese language spoken mainly in Guangdong Province, Hongkong and Macau.
- Compared to Mandarin, on-focal pitch change is found to be limited in Cantonese. PFC is found to be missing (Wu et al. 2010).
- Therefore Cantonese is claimed to lack a consistent prosodic focus marking device, but rather prefer morphosyntactic means.

Interaction of focus and lexical tones

- Cantonese has nine lexical tones. Three of them are checked tones which end with an unreleased stop consonant and are shorter than unchecked tones (represented in the right).

- Focus modification of f0 is found to be contingent on tonal conditions (Xu 1999). How duration is contingent on tones is unknown.

Different focus types

- Different focus types may receive distinctive prosodic marking (Breen et al. 2010). Only wh-focus has been studied in Cantonese.

Research questions

- Could duration be an effective cue in focus marking?
- Are checked and unchecked tones modified differently under focus?
- Does focus type, especially the morphosyntactic markers affect prosodic marking?

Methodology

Stimuli

- Four focus conditions; focus in subject position on a disyllable: 'a'(prefix) + **person name**.
- The adjacent monosyllabic verb counts as a '**post-focal verb**' and the entire part after focus counts as '*post-focal material*'.
- Person name and adjacent verb are of the same tone and materials cover all nine lexical tones.

Condition 1: Broad focus

Question: What happened? (发生咗乜事?)

乙: 阿-英 开 咗 间 铺
Answer: A-jing open PFV CLF store

Answer: A-jing opened a store.

Condition 2: Wh-focus

Question: Who opened a store? (边个开咗间铺?)

乙: 阿-英 开 咗 间 铺
Answer: A-jing open PFV CLF store

Answer: A-jing opened a store.

Condition 3: Corrective focus with 'hai' marker

Question: Did your friend A-Zing open a store?

(你朋友阿静係咪开咗间铺啊?)

乙: 唔 係 阿-静,
Answer: NEG COP A-zing,
係 阿-英 开 咗 间 铺
HAI A-jing open PFV CLF store

Answer: It is not A-zing. It is A-jing who opened a store.

Condition 4: 'Even' focus with 'lian...dou' construction

Background: A-jing is not good at doing business.

(阿英係最冇生意头脑嘅)

乙: 连 阿-英 都 开 咗 间 铺,
Answer: LIN A-jing DOU open PFV CLF store,
依家 生意 咁 好 做 嘅 咩?
now business so easy do SFP SFP

Answer: Even A-jing opened a store; is doing business so easy now?

Procedure

- Sixteen native speakers (eight males, eight females) recorded, aged from 26 to 63. Half of the data have been analysed so far.
- Participants heard the pre-recorded question and read out the answer, as if they were involved in a natural conversation.
- Two-way ANOVA was conducted.

Results

Duration of focused elements

- Duration of focused 'a' and 'name' is lengthened compared to broad focus. The 'even' focus type shows the strongest effect.
- 'a' (the prefix) before checked tone is longer than that before unchecked tone, a tendency to keep the disyllabic unit as constant.

Duration of post-focal verb

- Duration of post-focal verb is not affected by focus condition, only by tone type (checked tones are shorter).

Duration of post-focal material

- Values below 0 indicates a compression of duration compared to condition 1.
- Post-focal materials are compressed under focus condition 2 when there is no syntactic marker, but not in other conditions.

- The within-sentence effect is even stronger: the ratio Dur(a+name)/Dur(post-focal material) distinguishes all pairs of focus conditions except the condition 2&3.
- f0 is not boosted by focus, except on a subset of tones under condition 4.

* All reported differences are significant at 5% level.

Conclusion and Discussion

Duration as an effective cue

- There is both on-focal boosting and post-focal compression in terms of duration in Cantonese.
- The effectiveness of duration may have been underestimated in previous studies due to two reasons: (1) the duration effect needs time to build up, so it better reveals over a large constituent rather than a single syllable (2) the within-sentence effect (the relative duration of focused/unfocused element) is not considered, which is much more significant than across-sentence effect (Duration of the same position under different focus conditions).
- Instead of 'no prosodic marking', Cantonese tends to use **prosodic phrasing** like Korean, whereas Mandarin uses **pitch register** (Kügler et al. 2020). This also fits the distinction in lexical prosody that Mandarin arguably has stress whereas Cantonese does not.
- Follow-up studies on whether the duration cue could be effectively used by native listeners.

Interaction between duration and tone

- Checked tones under focus resist lengthening (the lengthening effect under condition 4 is mainly the phrasing effect).
- As a compensation strategy, the duration of the prefix 'a' before checked syllables is lengthened under focus and is always longer than that before unchecked syllables.

Interaction between duration and syntax

- The presence of a focus marker introduces strong pragmatic meaning, therefore the focused element has additional duration-lengthening effect.
- However, the absence of a focus marker (condition 2) encourages the use of post-focal compression in duration.

References

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