

Comparative Studies of Rhyming in Cantonese and Mandarin¹

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Abstract

Following Wagner and McCurdy's 2010 study on identity rhymes in French and English, this paper reports on a comparative study exploring the perception of identity rhymes in Mandarin and Cantonese.

Introduction Section

Optimal English rhymes are word pairs with same nucleus and coda (if present), but with different onsets. Identity rhymes refer to the rhymes with the same onset. The identity rhyme is acceptable according to Great Song Revised and Expanded Rhymes, while in English poetry, it is considered to be “unconventional and even unacceptable” and to “fall ridiculously flat” (Wagner&McCurdy 2010).

This paper reports on a study of identity rhyme in Cantonese and Mandarin. As in Wagner and McCurdy's 2010 study on French and English, this research seeks to find the extent to which Mandarin and Cantonese speakers consider rhymes with the same onset, identity

¹ We appreciate the feedbacks and advice provided by Professor Michael Wagner, who is a Professor of Linguistics at McGill University.

rhymes, to be good. Furthermore, we consider what impact, if any, tone has on rhyme quality.

Contrast to the definition of rhymes in English, in Middle Chinese, the predecessor of Mandarin and Cantonese, rhymes with the same onset are allowed. Further, a level tone cannot rhyme with another level tone, and a non-level tone cannot rhyme with another non-level tone (see *Great Song Revised and Expanded Rhymes (陳 and 邱 1008)).

According to the anecdotes of some Mandarin and Cantonese speakers, the identity rhymes are considered natural but there was not a perception study to test that judgement. We will examine if these constraints on rhymes in Middle Chinese also hold in Mandarin and Cantonese. If similar restrictions on rhyming based on tone were to hold in Mandarin or Cantonese, it would be important to see whether these restrictions correspond with present-day tone pronunciation or the historical Middle Chinese tone category.²

In Wagner and McCurdy (2010), the native French speakers rate as good both identity rhymes and “good rhymes” (rhymes with different onset but same nucleus and coda). We designed a comparative experiment based on Wagner and McCurdy (2010) to see what instincts Mandarin and Cantonese have on rhyming syllables with the same onset. We find that Mandarin and Cantonese follow Middle Chinese in allowing identical rhymes.

We further tested whether tone affects rhyming judgements in Mandarin and Cantonese and found that, unlike in Middle Chinese, it does not.

Methods

We had ten Mandarin speakers and nine Cantonese speakers listen to several mini-poems in a random order. Each mini-poem had one of four conditions:

- DiffOnset SameFinal (like Wagner and McCurdy’s ‘Good’)
- SameOnset SameFinal SameTone (like Wagner and McCurdy’s ‘Identical’)
- SameOnset SameFinal DiffTone (added to test if Mandarin and Cantonese’s tones affect rhyming judgements)
- DiffFinal (like Wagner and McCurdy’s ‘Bad’)

Following the ‘within’-style design, the participants listened to every mini-poem in their chosen variety. With the goal of comparing the quality of the four conditions, the experiment had participants rate the rhymes from 1 (Very Bad) to 6 (Very Good). After the main part of the experiment, they were debriefed and asked to provide feedback.

² Middle Chinese level-toned syllables with voiced onsets become oblique in Mandarin and Cantonese. For example, Middle Chinese 林 /lim/ ‘forest’ has a flat tone, but its reflexes in Mandarin and Cantonese do not due to the voiced /l/ initial. Furthermore, Middle Chinese falling tones correspond to mid or low-level tones in Cantonese. For example, 見 ‘to see’ is /kên/ in Middle Chinese but [ki:n³³] in Cantonese.

Cantonese speakers listened to sixteen couplets (4 conditions × 4 sets) and Mandarin speakers listened to thirty-two couplets (4 conditions × 8 sets).³ Every set had one example of each of the four conditions and maintained the same second line throughout, thereby minimizing variation caused by change in mini-poem.

The participants did not receive compensation and were not run on any other experiments.

Item sets samples:

The following examples are transcriptions of the mini-poems participants listened to. ⁴ The highlighted syllables are those whose rhyming quality was evaluated. Cantonese is transcribed in the International Phonetic Alphabet and Mandarin in Pīnyīn.

Cantonese Examples (from Item Set 2):

- DiffOnset SameFinal:
 - 我食咗好多牛耳 | 唔好俾媽媽知
 - ŋɔːɿ sɪk˥ tsɔːɿ hou˥ tɔːɿ ŋeʊ˥ **jiːɿ** | ɱɿ hou˥ pei˥ maːɿ maːɿ **tsiːɿ**
 - I ate a lot of cow's ears. | Don't let mom know.
- SameOnset SameFinal SameTone:
 - 我有枝樹枝 | 唔好俾媽媽知
 - ŋɔːɿ jɐʊ˥ tsɪːɿ syːɿ **tsiːɿ** | ɱɿ hou˥ pei˥ maːɿ maːɿ **tsiːɿ**
 - I have a stick. | Don't let mom know.
- SameOnset SameFinal DiffTone:
 - 我鋸親我嘅手指 | 唔好俾媽媽知
 - ŋɔːɿ kaːɿ tsʰɛn˥ ŋɔːɿ kɛːɿ seʊ˥ **tsiːɿ** | ɱɿ hou˥ pei˥ maːɿ maːɿ **tsiːɿ**
 - I cut my finger. | Don't let mom know.
- DiffFinal:
 - 我食咗啲熱氣 | 唔好俾媽媽知
 - ŋɔːɿ sɪk˥ tsɔːɿ tiːɿ jiːt˥ **heɿ** | ɱɿ hou˥ pei˥ maːɿ maːɿ **tsiːɿ**
 - I ate some hot air. | Don't let mom know.

³ The Cantonese couplets were composed and recorded by Sophie Thompson, a volunteer, while the Mandarin couplets were composed and recorded by Qian.

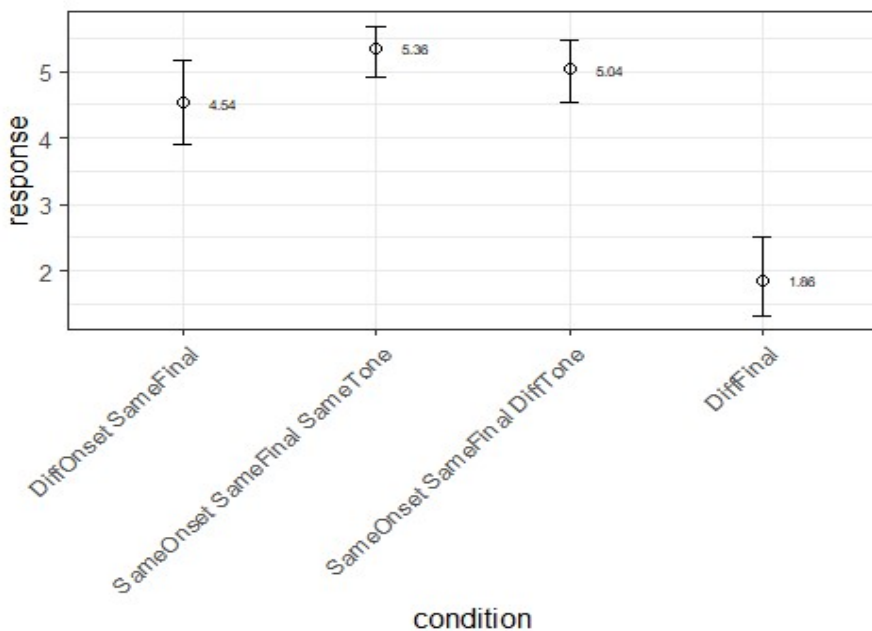
⁴ Participants did not see these written versions of the mini-poems.

Mandarin Examples (from Item Set 8):

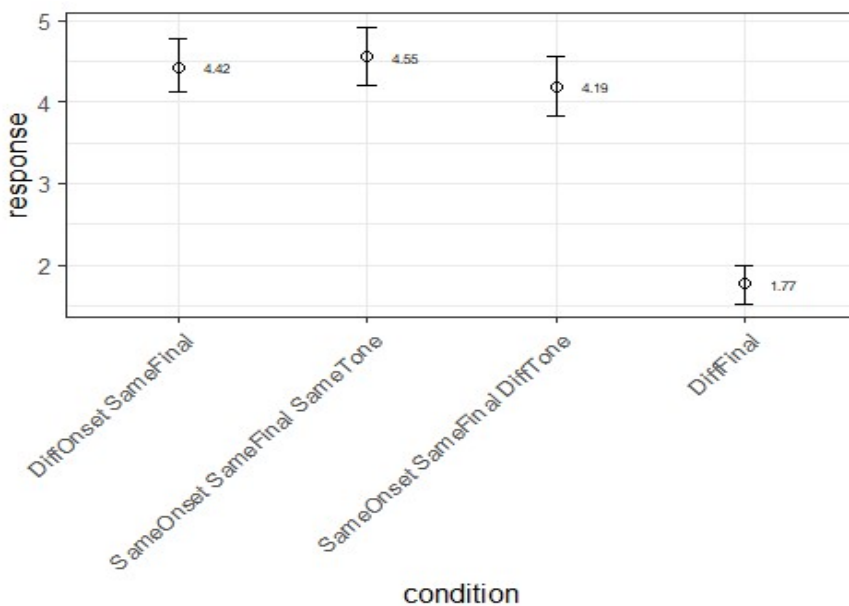
- The tone pattern contrast (level versus oblique) exists in the same onset, same final, and different tone example.
- DiffOnset SameFinal:
 - 他有玻璃杯 | 我在泡咖啡
 - ta1 you3 bo1 li2 **bei1** | wo3 zai4 pao4 ka1 **fei1**
 - He has a glass | I'm making coffee
- SameOnset SameFinal SameTone:
 - 你要论是非 | 我在泡咖啡
 - ni3 yao4 lun4 shi4 **fei1** | wo3 zai4 pao4 ka1 **fei1**
 - You want to argue about right or wrong | I'm making coffee
- SameOnset SameFinal DiffTone:
 - 手机已报废 | 我在泡咖啡
 - shou3 ji1 yi3 bao4 **fei4** | wo3 zai4 pao4 ka1 **fei1**
 - My phone is dead | I'm making coffee
- DiffFinal:
 - 他要喝果汁 | 我在泡咖啡
 - ni3 yao4 he1 guo3 **zhi1** | wo3 zai4 pao4 ka1 **fei1**
 - He wants to drink juice | I'm making coffee

Results

The first two graphs (below) demonstrate how Cantonese and Mandarin speakers ranked each condition's rhyme quality. The number next to each point represents the arithmetic mean rating for each condition. Speakers expectedly ranked DiffFinal as poor; the other three conditions, having overlapping error bars, show no significant difference in their average rating.

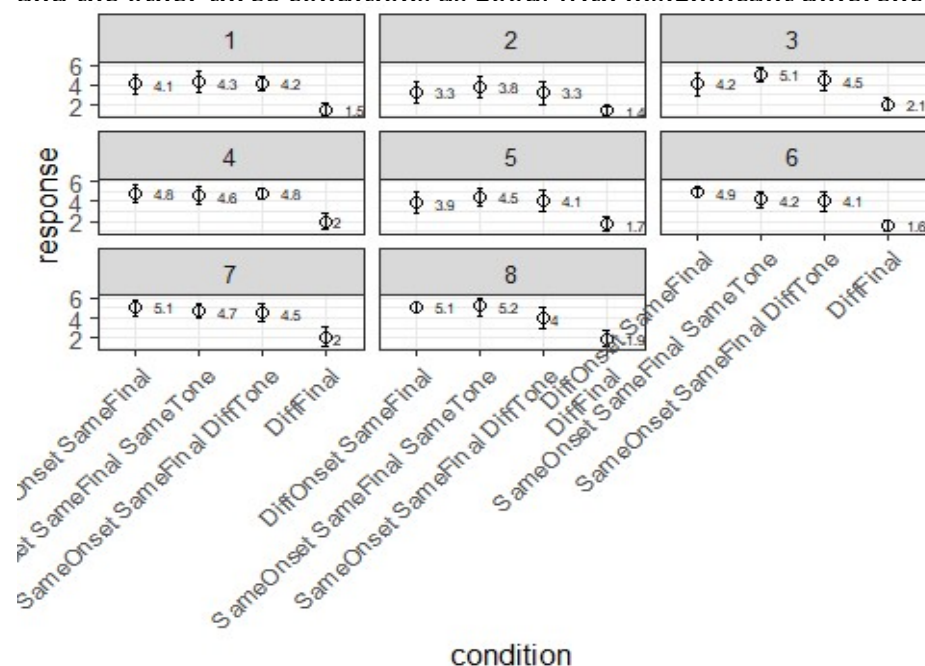


Response of the Mandarin experiment by condition

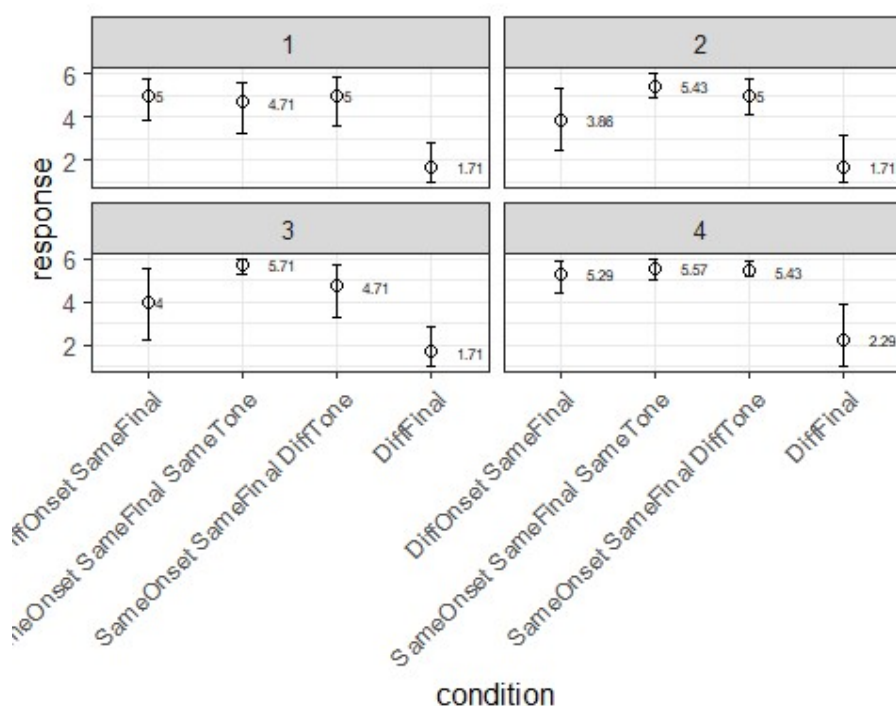


Response of the Cantonese experiment by condition

The third and fourth graphs break up the data by item set, as labeled by the number above each sub-graph. As with the first two graphs, speakers consistently rate DiffFinal as poor and the other three conditions as good, with insignificant differences between these three.



Average response of Mandarin experiment by item sets



Average response of Cantonese experiment by item sets

The results above demonstrate that participants in both experiments judge rhymes with the same onset as good in Mandarin and Cantonese whether the tone varies (as in SameOnset SameFinal DiffTone) or not (as in SameOnset SameFinal SameTone).

Note that, in both Cantonese (item set 2) and Mandarin (item sets 4 and 8), level tones rhyming with non-level tones (as in SameOnset SameFinal DiffTone) are judged similarly to level tones rhyming with other level tones (as in SameOnset SameFinal SameTone). This difference from Middle Chinese is discussed below.

Feedback

The following are examples of feedback for the experiments (translated if necessary).

- The quality of some recordings are not so good.
- I don't fully comprehend the rules for rating.
- I don't understand what a good rhyme is.

Particularly helpful was the following feedback from a Cantonese participant. This person's frustration at the lack of traditional Chinese, odd ordering of place names, and the lack of clear bilingual option point out important flaws in our pre-experiment survey which are to be rectified in future work * the survey is written in simplified Chinese, which is unfriendly to Hong Kongers * First question is about place of birth and residence, to be chosen from a dropdown menu. The names are listed in Chinese but follow the alphabetical order in English. This is confusing (e.g., I had to look for 香港 (Hong Kong) somewhere near the middle, and extract it from 海地 (Haiti), 洪都拉斯 (Honduras), etc.) * This is where I gave up: you are only given one choice for 'mother tongue', but I consider myself as being bilingual from early childhood and can't really decide whether Cantonese or English is my mother tongue. I could not continue without the 'bilingual' option.

Discussion

From the results we obtained as shown in the plots above. Mandarin and Cantonese speakers have similar perception about the rhymes as what was tested in French (without the presence of tone manipulation). Speakers of Mandarin and Cantonese treat identity rhymes favorably in contrast to rhyme pairs with different nuclei and codas (if present).

Note that, unlike in Middle Chinese, two level-toned syllables rhyming are judged as good. For example, In Cantonese item set 2 (given in section 4 above), the last syllable of the second line is 知 /tʃiː/ which bears a high level tone⁵ On average, speakers rated the

⁵ Besides its synchronic status as a level tone, the Cantonese high level tone also descends from the Middle Chinese level tone. The other two Cantonese level tones were historically falling tones for syllables ending in sonorants (Carlyle 2020 p.84). The Cantonese low falling tone, ㄓ, also descends from the Middle Chinese level tone, appearing in place of a

rhyme between 枝 /t̚siːl/ and 知 /t̚siːl/ as good (in fact, slightly better than 指 /t̚siːʔ/ and 知 /t̚siːl/ where 指 has a rising tone). Despite both syllables having a level tone, they are still good rhymes. Mandarin Item sets 4 and 8 demonstrate that Mandarin also shows little difference in judgment between level tones rhyming with non-level tones and with other level tones. The observation here is that Mandarin and Cantonese do not follow the rhyming constraint by tone contrast from Middle Chinese.

Future research could focus on the impacts of this study on Wagner and McCurdy's discussion of the Williams effect. Like English but unlike French, Mandarin has anaphoric destressing. If Mandarin (or Cantonese) were found to also have the Williams effect, this would serve as counter evidence against Wagner and McCurdy's account of English and French differences. Furthermore, as discussed in Cheung 1996, Cantonese syllables with different codas may be considered good by native speakers as long as they have identical nuclei. We can examine these features in Mandarin as well by utilizing nasal codas (Plosive codas do not exist in Mandarin but they exist in Middle Chinese and Cantonese). Future work could incorporate judgments on coda variation. An improvement to the methodology would be including a Traditional Chinese option. As discussed in the Feedback section, a participant was offended by the settings and decided to quit the experiment.

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high flat tone when the onset was historically voiced. (Gu and Simmons 2020 p.7, Carlyle 2020 p.84).