

## Discourse meaning of Cantonese polar question intonation and sentence-final particles

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This study investigates the semantic compositionality of polar question intonation by comparing Cantonese to English. Both English and Cantonese prototypically signal polar questions with rising intonation, but their intonational compositions differ. English is a lexical stress language in which the question rise begins at or near the final stressed syllable of the utterance (Wells, 2006). According to ToBI (Pierrehumbert & Hirschberg, 1990), this question rise comprises three intonational units (or a “tune”): a low pitch accent (L\*), a high phrase accent (H-), and a high boundary tone (H%). Cantonese is a lexical tone language in which the question rise occurs at the end of an utterance (Xu & Mok, 2011). According to C\_ToBI (Wong et al., 2005), this question rise comprises only a high boundary tone (H%). Cantonese has a limited set of intonation patterns; where intonation is used to express polar questions or attitudes in English, sentence-final particles (SFPs) are often used in Cantonese (Wakefield, 2010, 2016). For example, *maa3* signals a neutral, information-seeking question (Law et al., 2018), *ho2* signals a confirmation-seeking question that expresses an attitude (belief) toward the proposition *p* of the utterance (Chor, 2018), and *me1* signals a confirmation-seeking question that expresses an attitude (disbelief) toward *p* (Kuong, 2008). This study analyzes both polar question intonation and SFPs in Cantonese.

To compare the semantic compositionality of intonation between Cantonese and English, this study analyzes Cantonese polar question intonation and SFPs using a commitment-based discourse model that is based on Rudin's (2018) model for English. Rudin analyzed the falling tune [H\* L- L%] for falling declaratives (e.g., John drinks tea.) and the rising tune [L\* H- H%] for rising declaratives (e.g., John drinks tea?) and rising interrogatives (e.g., Does John drink tea?). This study analyzes five Cantonese utterance types (e.g., 1): [%]-declarative (where [%] = lack of a boundary tone; Chow, 2017), [H%]-declarative, and *maa3*-interrogative — which correspond to Rudin's three English utterance types — and *ho2*-interrogative and *me1*-interrogative. *Ho2* and *me1* are biased and convey both illocutionary forces of asserting and asking (Lam, 2014).

- (1) a. *Zyun1 jam2 caa4 [%] / [H%]*                      c. *Zyun1 jam2 caa4 ho2*  
John drink tea [%] / [H%]                      John drink tea SFP  
‘John drinks tea. / John drinks tea?’                      ‘John drinks tea. Is that right?’
- b. *Zyun1 jam2 caa4 maa3*                                      d. *Zyun1 jam2 caa4 me1*  
John drink tea SFP                                      John drink tea SFP  
‘Does John drink tea?’                                      ‘John doesn’t drink tea. Does he?’

Following Rudin (2018) and Farkas and Bruce (2010), discourse effects of an utterance on this study’s discourse model's components (e.g., Discourse Commitments of the speaker; Question Under Discussion (QUD)) reflect the meaning of the utterance. Rudin’s model maps intonation to speaker commitment: [H\* L- L%] commits the speaker to *p* whereas [L\* H- H%] does not commit the speaker. Problematically, both [H\* L- L%] and [L\* H- H%] (e.g., a high-rise terminal; Warren, 2016) can occur on a declarative that performs the act of asserting, and both [H\* L- L%] (e.g., expressing curtness; Bartels, 2013) and [L\* H- H%] can occur on an interrogative that performs the act of asking. This study proposes to map intonation/SFP to illocutionary force and then obtain speaker commitment based on the assumption that asserting commits the speaker and asking does not commit the speaker to the proposition of the utterance. According to the proposed analysis, [%]/*ho2* and *me1* commit the speaker to *p* and  $\neg p$ , respectively, whereas [H%]/*maa3* does not. [%] differs from *ho2* and [H%] differs from *maa3* in their syntactic (declarative vs. interrogative) form that gets added to the QUD.

This study suggests that (i) the meaning of polar question intonation can be analyzed at the tone unit level (e.g., H%), (ii) polar question intonation and SFPs have similar semantic functions in Cantonese, and (iii) the proposed discourse analysis can be modeled similarly across languages.

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