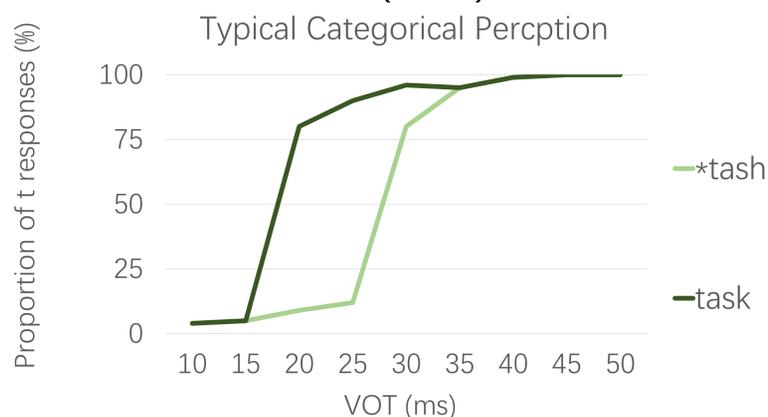


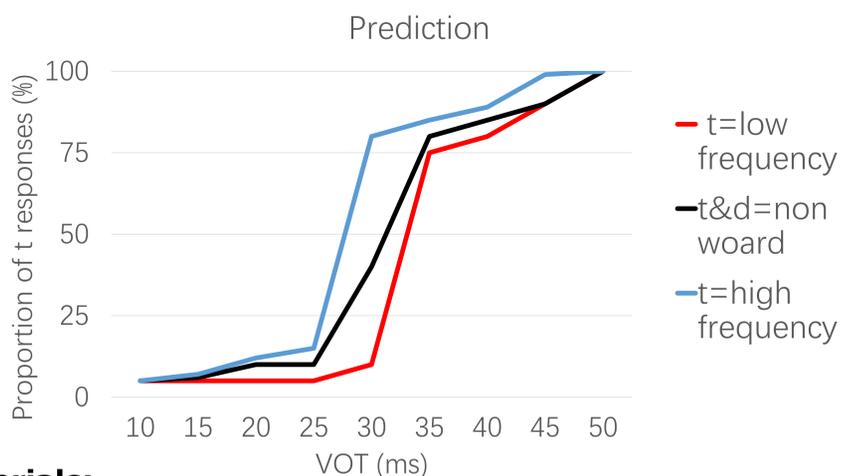
Ganong effect:

- Lexicality has a top-down influence on people's perception of sounds (Ganong, 1980)
- If a sound is ambiguous between being a good token of /t/ and a good token of /d/, people tend to hear it as /t/ in contexts where /t/ would make it a real word (*task*), and as /d/ when /t/ would make it a nonword (**tash*)



Present Study: Does **word frequency** also influence perception this way?

Prediction: People will hear /t/ more often when it makes a high-frequency word than when it makes a low-frequency word.



Materials:

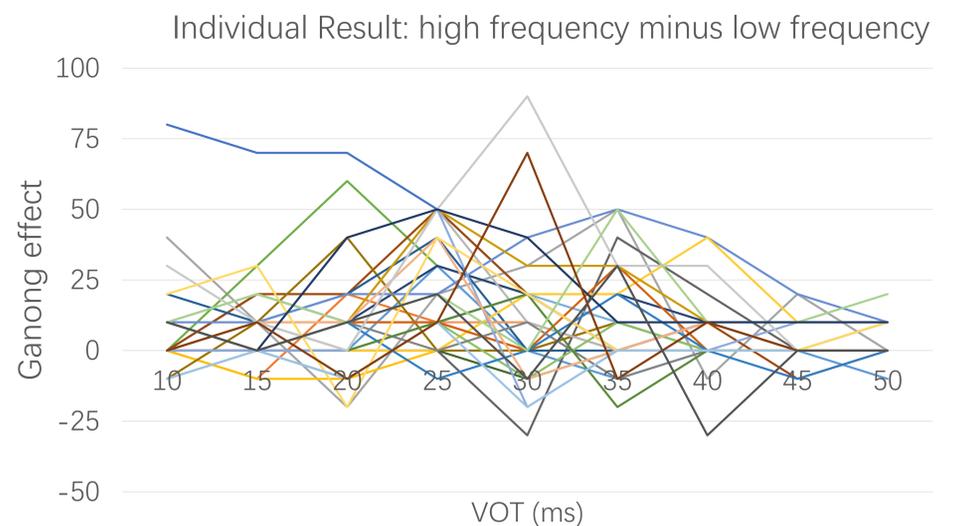
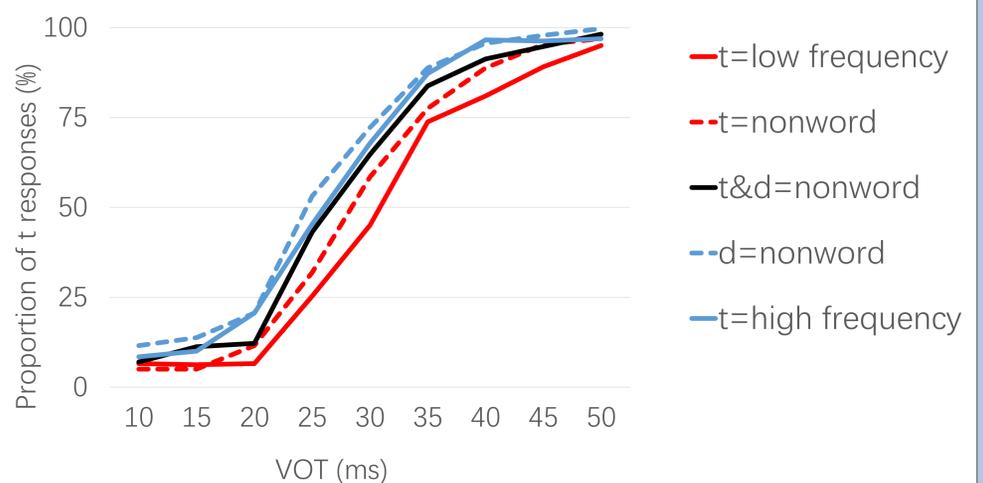
- Mandarin disyllabic words starting with *tui*

Context	Pinyin	Chinese	Meaning	Frequency <small>(Cai & Brysbaert, 2010)</small>
t=low frequency	<i>duìhuà</i>	对话	conversation	716
	<i>tuihuà</i>	退化	degeneration	77
t=high frequency	<i>duìyì</i>	对弈	play chess	7
	<i>tuiyì</i>	退役	retire	171
t&d=nonwords	<i>*duìchī</i>			0
	<i>*tuìchī</i>			0
t=real word	<i>*duìchū</i>			0
	<i>tuìchū</i>	退出	quit	1322
t=nonword	<i>duìfāng</i>	对方	counterpart	2036
	<i>*tuìfāng</i>			0

- VOT manipulated in one token of *tui* manipulated into different VOTs (10-50 ms, 5-ms steps)
- Each token spliced onto a second syllable (*huà, yì, chū, fāng, and chī*):
- 10 repetitions per stimulus per VOT

Task: Forced choice on whether the word heard began with *dui* or *tui*.

Results (N=35): Ganong effect for lexicality (dashed lines) and frequency (solid lines)



Discussion: Difference between high- and low-frequency words will influence individual's speech perception. This result extends the understanding of top-down processing in speech perception.

Open question: Nonword=word with 0 frequency?

Supportive: the real word line standing for *tuìchū* (退出) is higher than the high frequency line standing for *tuiyì* (退役).

Against: the nonword line standing for **tuìfāng* is higher than the low frequency line standing for *tuihuà* (退化).

Reference:

- Cai, Q., & Brysbaert, M. (2010). SUBTLEX-CH: Chinese Word and Character Frequencies Based on Film Subtitles. *PLoS ONE*, 5(6), e10729.
- Ganong, W. F. (1980). Phonetic categorization in auditory word perception. *Journal of Experimental Psychology: Human Perception and Performance*, 6(1), 110.