

L2 mental lexicon development: effects of homophone and talker variability on the learning of spoken words in beginner L2 Chinese learners

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Jiang [1,2] proposes a three-stage lexicon development for post-puberty second language learning. The first or formal stage of an L2 lexical entry involves only phonological (and orthographical) information. During this stage, the L2 representation relies on the L1 lexical entry for conceptual information through translation. Next, L1 lemma information (e.g., semantics, morphosyntax) is copied to the L2 lexical entry. During the third and final stage the L2 lemma is fully formed and L2 learners are able to use the word more accurately and appropriately. The current study focuses on stage one studying L1-English L2-Chinese learners' learning of phonological forms of new words in L2 Chinese. As abundance of homophones exists in Chinese due to the relatively small number of syllable types, Liu and Wiener [3] found that L2 Chinese learners learn new words more easily if the new word is homophonous (both segmentally and tonally) with a word they already know. In their study, only a single speaker's tokens were used in the learning and testing phases. The current study extends the previous study to further examine whether talker variability interacts with homophone causing different learning outcomes.

Thirty-nine adult beginning learners of L2 Chinese were taught 20 new tonal words in a spoken word-picture association task for three consecutive days. The target words consisted of minimal pairs that only contrasted in tones (e.g., shu1 'uncle' vs. sh3 'mouse'). To manipulate homophone status, 10 words were homophonous to words that learners had already learned and known at the time of experiment while the other 10 words were not homophonous to any previously learned word. To manipulate talker variability, participants were trained on a single talker but tested on 16 new talkers or trained and tested on 16 (multi)-talkers. Participants completed a 4-alternative-force-choice task on 3 consecutive days (see Figure 1). Both groups had a significantly increase on accuracy (see Figure 2) and significantly faster response times (see Figure 3) on Day 2 compared to Day 1, but this learning was independent of homophone status or talker group. No difference was found between Day 2 and 3 in terms of accuracy and RT. No other effects were found. These results suggest that the tonal homophone advantage in L2 word learning found in Liu and Wiener [3] may have been partially driven by an exceptionally high level of talker familiarity as that study used a single speaker both for training and testing. The current study showed that talker variability disrupts any homophone advantage that L2 Chinese learners may be able to use. In combination with Liu and Wiener [3], these findings suggest that specific phonological information (e.g., homophones) is stored in the lexicon. For beginner L2 Chinese learners, access to homophones is modulated by talker familiarity.

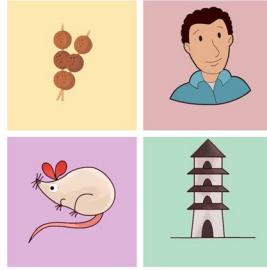


Figure 1. Example 4-AFC slide. Bottom left: shu3 ‘mouse’ (target); top left: wan2 ‘(meat) ball’ (distractor); top right: shu1 ‘uncle’ (tonal competitor); bottom right: ta3 ‘pagoda’ (distractor).

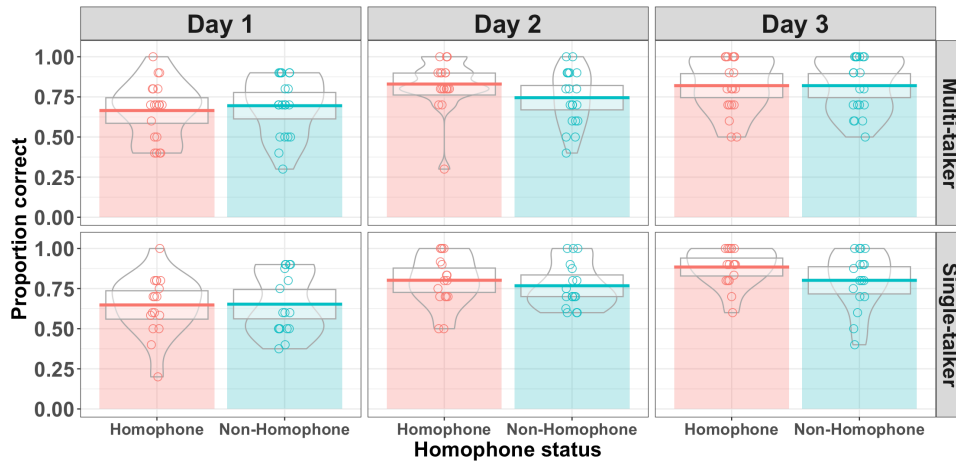


Figure 2. 4-AFC accuracy by participant (point), Talker variability (color), Homophone status, and Day. White boxes represent 95% confidence intervals with solid color line representing mean.

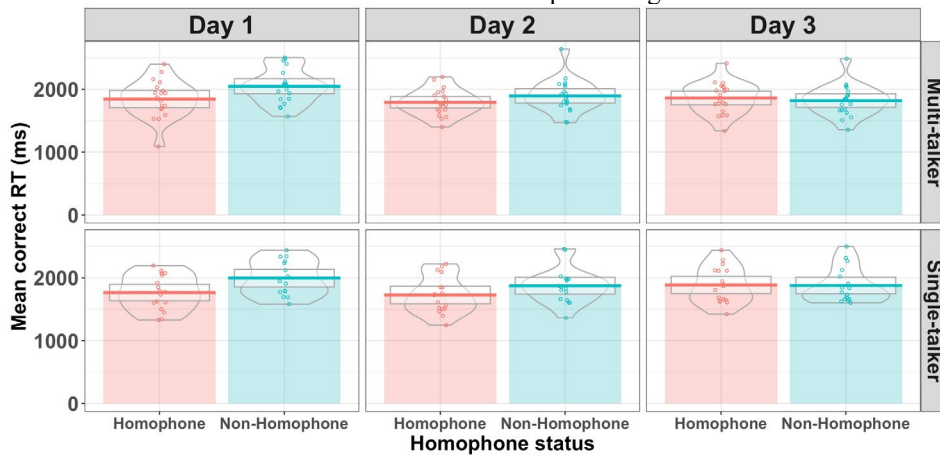


Figure 3. Correct 4-AFC mouse-click response times by participant (point), Talker variability (color), Homophone status, and Day. White boxes represent 95% confidence intervals with solid color line representing mean.

References

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