

Classifier Priming in Mandarin Chinese Noun Phrase Production

Hong Zhou (hong.zhou@ed.ac.uk)¹, Holly P. Branigan¹, Martin J. Pickering¹

¹Department of Psychology, The University of Edinburgh, Edinburgh, United Kingdom

Background

A noun in Chinese is typically compatible with two or more classifiers. In addition to the generic classifier *ge*, there are also specific classifiers that carry semantic cues about the noun. However, classifier–noun mappings are not one-to-one. Instead, nouns are often compatible with multiple specific classifiers because they can be categorised along different semantic dimensions, such as shape or function. In previous picture-naming experiments, the randomised presentation order sometimes created sequences of words sharing aspects of the same semantic category. It was observed that participants occasionally reused the classifier produced for the previous noun when naming the next one, even when a more compatible or more frequently used classifier was available for the target noun.

The observed phenomenon suggests a priming effect in which the semantic category associated with the first classifier remains active during production of the following classifier–noun phrase. When two nouns belong to the same semantic category, classifier reuse may strengthen activation and temporarily override the frequency or dominance of classifier use. Such effects are broadly consistent with findings from priming research in language production [1]. Within Levelt's model of language production, classifier selection occurs at the lemma level, where lexical items are associated with syntactic and semantic representations [2]. After selection, activation of a classifier may decay gradually rather than disappearing immediately. Residual activation from a previously produced classifier may therefore bias subsequent classifier selection for semantically related nouns. Such effects may also involve conceptual-level activation, as nouns sharing a classifier typically overlap in semantic or conceptual properties that license the same classifier category, and classifier choice has been shown to be sensitive to activation and availability during real-time production [3].

Methods and Preliminary Results

To investigate this possibility, we conducted a picture-naming priming experiment manipulating prime classifier type (generic vs. specific classifier) and prime–target noun relation (same vs. different noun). In prime trials, participants named pictures using a visually provided classifier; in target trials, participants named pictures without classifier cues. The experiment examined whether classifier production in target trials was influenced by the classifier produced in the preceding prime trial. A second planned experiment examines priming between dominant and alternative specific classifiers for the same noun, testing whether presentation of an alternative classifier as a prime alters speakers' classifier choice when a more dominant classifier is available.

Preliminary analyses suggest that specific classifier primes increase the likelihood of producing the intended specific classifier in subsequent target trials. Priming effects were extremely strong in same-noun conditions and remained significant in different-noun conditions, suggesting that shared semantic context facilitates classifier priming. The interaction between prime classifier type and noun relation further suggests that classifier priming effects are amplified when semantic overlap exists between successive nouns. Significant priming effects were observed in both same- and different-noun conditions, although the effect was substantially stronger in same-noun contexts.

References

- [1] Pickering, M. J., & Branigan, H. P. The representation of verbs: Evidence from syntactic priming in language production. *Journal of Memory and Language*, 39(4), 633–651, 1998.
- [2] Levelt, W. J. M., Roelofs, A., & Meyer, A. S. A theory of lexical access in speech production. *Behavioral and Brain Sciences*, 22(1), 1–38, 1999.
- [3] Zhan, M., & Levy, R. Availability-based production predicts speakers' real-time choices of Mandarin classifiers. *Proceedings of the Annual Meeting of the Cognitive Science Society*, 41, 2019.

Figures and Tables

Table 1: Example conditions in the classifier priming experiment

Condition	Prime	Target
Specific-same noun	冰箱 <i>bīngxiāng</i> ('fridge') <i>tái</i> classifier ('machine')	冰箱 <i>bīngxiāng</i> ('fridge')
Specific-different noun	电脑 <i>diànnǎo</i> ('computer') <i>tái</i> classifier ('machine')	冰箱 <i>bīngxiāng</i> ('fridge')
Generic-same noun	冰箱 <i>bīngxiāng</i> ('fridge') <i>gè</i> classifier (generic)	冰箱 <i>bīngxiāng</i> ('fridge')
Generic-different noun	电脑 <i>diànnǎo</i> ('computer') <i>gè</i> classifier (generic)	冰箱 <i>bīngxiāng</i> ('fridge')