

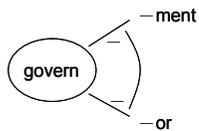
# Morphological Priming in Suffixed and Compound Words in Chinese

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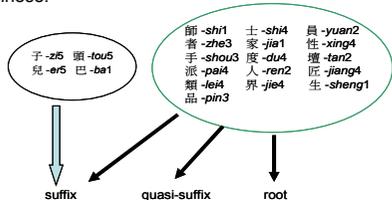
## Background

- Marslen-Wilson et al. (1994) found that semantically related prime-target pairs sharing the same stem don't prime each other in cross-modal repetition priming tasks in English. They suggested that competition among suffixes reduces morphological priming effect.



Inhibitory links between suffixes attaching to the same stem. (Marslen-Wilson et al., 1994:19)

- By contrast, compound priming shows no such inhibition (e.g., Zhou & Marslen-Wilson, 2000).
- Does Chinese show a similar contrast? But linguists disagree on which morphemes are truly affixes in Chinese.



(呂, 1989; 王, 1992; 江, 1993; 陳, 1994; 竺, 1999)

- Wang & Myers (2004) compared morpheme frequency effects in compounds vs. suffixed words in Chinese. Just as in English (Andrews, 1986) frequency effects for suffixed words only appeared when mixed with compounds.

- Present study: Attempt to replicate priming contrast claimed by Marslen-Wilson et al. (1994) in Chinese.

## Experiment Overview

- Overall design
  - The experiments were all primed visual lexical decision experiments.
  - Exp 1: Suffixed and compound stimuli presented together.
  - Exp 2&3: Suffixed and compound stimuli presented in separate experimental sessions.
- 84 Trials (28 word/word; 28 word/nonword; 28 fillers)
- Participants: 40 native speakers of Mandarin Chinese in Exp1, and 20 in Exp 2 and Exp 3 respectively.

## Semantic relatedness pretest

- Pretest 1 looked for the distinction between suffix and root; words sharing only suffix had lower scores.
- Pretest 2 tested the semantic relatedness score in experimental and control pairs. The scores are taken as a continuous covariate in the regression analyses.
  - experimental pair (Exp): prime and target share initial morpheme.
  - control pair (Ctrl): prime and target don't share any morpheme.

## Experiment 1: Mixed morphological types

- Materials
  - Suffix-like morphemes were selected from pretest 1.
  - 56 prime-target suffixed pairs and 56 transparent nominal compound pairs were presented in experimental and control pairs.
  - The semantic relatedness scores from pretest 2 were used to distinguish true morphological priming from mere semantic priming.
  - Example of materials

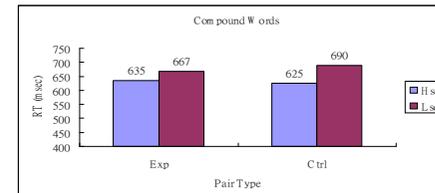
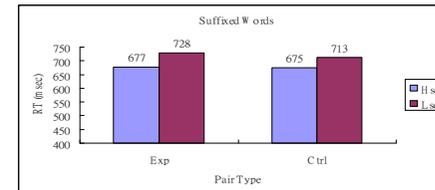
	Suffix	Com pound
[+M +S]	傷員-傷者 shang1yuan2 - shang1zhe3 "casualty" - "casualty"	傷口 - 傷兵 shang1kou3 - shang1bing1 "wound" - "injured soldier"
[-M +S]	藥品-傷者 yao4pin3 - shang1zhe3 "medicine" - "casualty"	病患 - 傷兵 bing4huan4 - shang1bing1 "patient" - "injured soldier"

[+M,+S] = morphologically and semantically related (experimental pair)

[-M,+S] = morphologically unrelated but semantically related (control pair)

## Results

- Statistical model:  
RT ~ Morphological Relatedness \* Semantic Relatedness \* Morpheme Type
- Suffixed words:
  - Morphological Relatedness was not significant, but Semantic Relatedness was significant ( $p < .05$ ).
  - Semantic priming was found, but no morphological priming.
- Compound words:
  - Morphological Relatedness was significant ( $p < .05$ ); also, Semantic Relatedness was significant ( $p < .001$ ).
  - Both Semantic and morphological priming were found.
- Different morphological type doesn't influence whether there is morphological priming or not ( $p > .05$ ).



## Discussion

- Morphological priming in suffixed words was absent in Exp 1, and was not influenced by compound processing.
- Compound priming was found in Exp 1, consistent with previous studies (Zhou et al., 1999; Zhou and Marslen-Wilson, 2000).

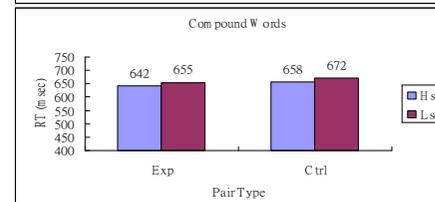
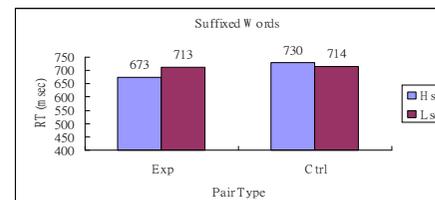
## Experiments 2 & 3: Separate morphological types

### Materials

- Exp 2: Same as the suffixed pairs in Exp 1.
- Exp 3: Same as the compound pairs in Exp 1.

### Result of Exp 2 & 3

- Statistical model : RT ~ Morphological Relatedness \* Semantic Relatedness
- Morphological Relatedness was not significant, but Semantic Relatedness was significant ( $p < .05$ ).
- Semantic Relatedness did shorten RT, but Morphological Relatedness didn't.



## Discussion of Exp 2 & 3

- Morphological priming in suffixed words was consistently absent in Exp 1&2. The findings may be explained by the competition model of Marslen-Wilson et al. (1994).
- Compound priming was absent in Exp 3, but found in Exp 1.

## Compound priming in Exp 1 & 3

- The lack of compound priming in Exp 3 was inconsistent with previous studies and Exp 1.
- Model: RT ~ Morphological Relatedness \* Semantic Relatedness Score \* Context
- Result:
  - Morphological Relatedness is significant. ( $p < .05$ )
  - Semantic Relatedness is significant. ( $p < .05$ )
  - Context is not significant.
- The lack of priming in Exp 3 may due to:
  - fewer stimuli than those in Exp 1
  - significantly different semantic scores between Exp and Ctrl / higher semantic relatedness score of Ctrl causing shorter RT in this category

## Conclusion

- Suffixed and compound words in Chinese may be distinguishable in the three primed visual lexical decision experiments.

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