The influence of translation ambiguity on bilinguals' reading in L1

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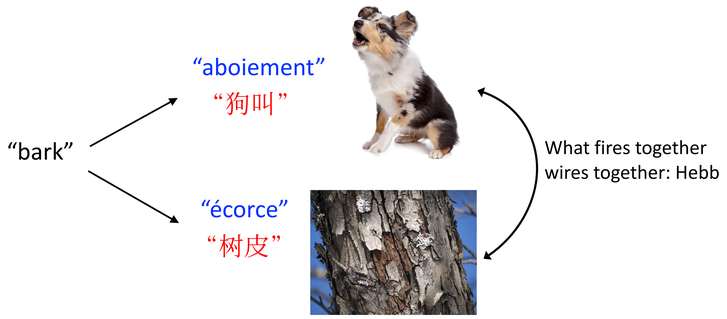
Introduction

- Translation Ambiguity occurs when a word in one language has more than one translation in another language
  - The English ambiguous word *bark* is translated into two distinct words in French: *aboiement* (dog bark) and *écorce* (tree bark)
  - In a French-English bilingual's mind, both *aboiement* and *écorce* map to the English word *bark*, and the association between *aboiement* and *écorce* could be strengthened because of this shared mapping.



The Current Study

- Are unrelated translation ambiguity pairs associated together in bilinguals' mind?
  - Is the "dog bark" meaning (*aboiement* or 狗叫) activated when a bilingual reads the word for "tree bark" in L1 (*écorce* or 树皮)?

Method

Stimuli: Critical Words

- 40 translation ambiguous words in English that translate into different words in French and Chinese.
  - Dominant meanings were translation 1 and subordinate meanings were translation 2.
- Spelling control word for each translation 2 word
  - Matched on word frequency and word length/number of strokes.

English	French 1	French 2	Spelling Control
bark	aboiement (dog)	écorce (tree)	cerise (cherry)

English	Chinese 1	Chinese 2	Spelling Control
bark	狗叫 (dog)	树皮 (tree)	柳木 (willow)

Method

Stimuli: Sentences

- 80 critical sentences, 160 filler sentences per language
- Two sentences were created for each ambiguous word based on the dominant meaning. These were translated to French and Chinese

*The dog let out a loud **bark** when he saw a squirrel.*

*He found his dog when he heard a **bark** coming from behind the shed.*

  - Substituted the ambiguous word with either the ambiguous partner or the spelling control.
  - Sentences were counterbalanced using two lists, A, B.

English	French 1	French 2	Spelling Control
bark	aboiement (dog)	écorce (tree)	cerise (cherry)

*Le chien a laissé échapper une **écorce**/**cerise** bruyante lorsqu'il a vu un écureuil.*

*Il a trouvé son chien quand il a entendu une **cerise**/**écorce** venant de derrière le hangar.*

Ratings by native speakers (not main study participants):

- Ambiguity substitution words (écorce) and spelling controls (cerise) were rated as equally wrong in the sentence context (1-not probable, 5-very probable).
  - ambiguity substitution: French: 2.24 Chinese: 2.62
  - spelling control: French: 2.00 Chinese: 2.48
- Predictability of correct word (aboiement)
  - French: .32
  - Chinese: .30

Participants & Experiment

- 57 French-English bilinguals and 41 Chinese-English bilinguals completed an online **moving window self-paced reading task**.
  - Words in the sentences were revealed one by one as the participants pressed the spacebar.

```
Le ----- - ------ -------- --- ------ --------
--------- - -- -- --------.

-- chien - ------ -------- --- ------ --------
--------- - -- -- --------.

...

-- ---- - ------ -------- --- ------ --------
--------- - -- -- écureuil.
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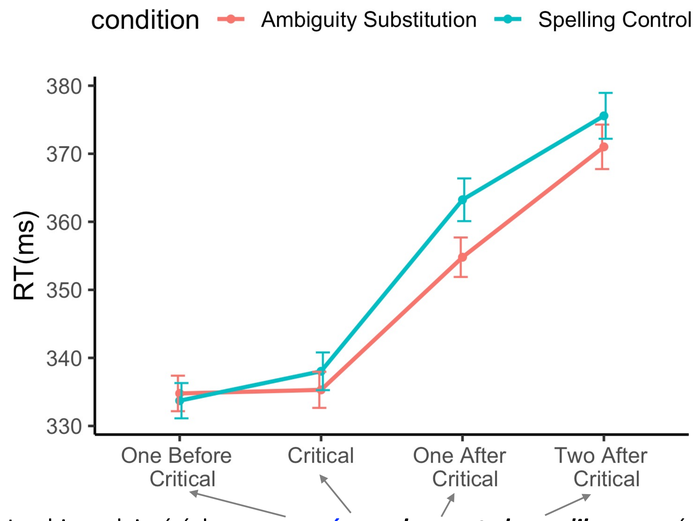
Results & Conclusion

French

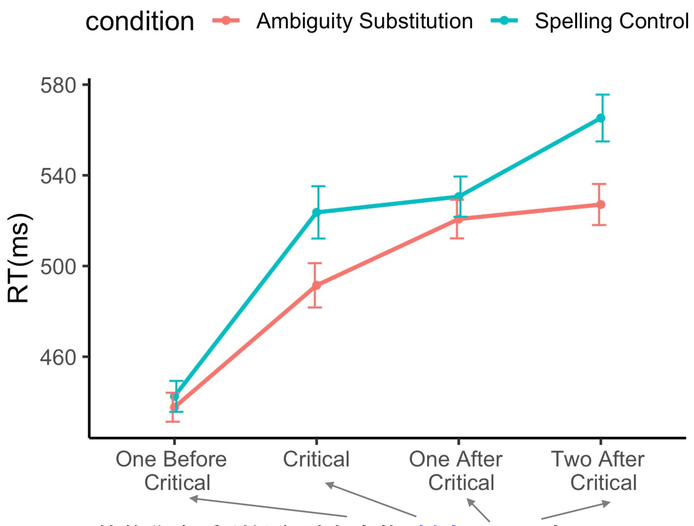
- Spelling controls were read slower than the Ambiguity Substitutions on one word after the critical word (p = .02) and two words after the critical word (p = .08).



Le chien a laissé échapper ***une*** ***écorce*** ***bruyante*** ***lorsqu'il*** a vu un écureuil.

Chinese

- Spelling controls were read slower than the Ambiguity Substitutions on the critical word (p = .02) and two words after the critical word (p = .02).



他的狗在看到松鼠时大声的 树皮 了 一声。

Conclusions

- Bilingual's native language processing is influenced by L2-L1 translation ambiguity due to L2 semantic ambiguity.
- Mapping of two L1 words onto one L2 word strengthens the associations between the two otherwise unrelated L1 lexical representations.