



# Spoken word recognition: Native vs. L2 learners of English



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## Introduction

Word recognition involves two levels of representations

- Sublexical level:
  - Individual sounds and sound sequences
  - Phonotactic probability (frequency of sound occurrence in words)
- Lexical level:
  - Whole words
  - Neighborhood density (number of similar sounding words)

p æ t
k æ p
k i t
\_ æ t
k æ s t
etc.

Vitevitch & Luce (1999) examined the differential effects of phonotactic probability and neighborhood density (sublexical vs. lexical) in word recognition

- RT:
  - Words (lexical):
    - high probability/density > low probability/density → competition (density effect)
  - Nonwords (sublexical):
    - high probability/density < low probability/density → facilitation (probability effect)

## Questions

- Do L2 learners recognize L2 words and nonwords based on two-level representation system?
- Do L2 learners and native speakers exhibit the same pattern?
  - L2 learners may be different from native speakers due to
    - Difficulty with processing L2 sounds → sublexical
    - Fewer vocabulary → lexical

## Method

### Participants

- Native English group
  - n = 43 (age 18-36)
- L2 English group
  - n = 39 (age 18-35)
  - L1 Chinese (n = 19), L1 Japanese (n = 20)
  - High English proficiency
  - Mean AOA (month) = 248 (84-390)
  - Mean LOR (month) = 58 (8-204)

### Stimuli

- 68 CVC

	High PP/D	Low PP/D
Words	17	17
Nonwords	17	17

- Fillers (34 pairs for words and nonwords)

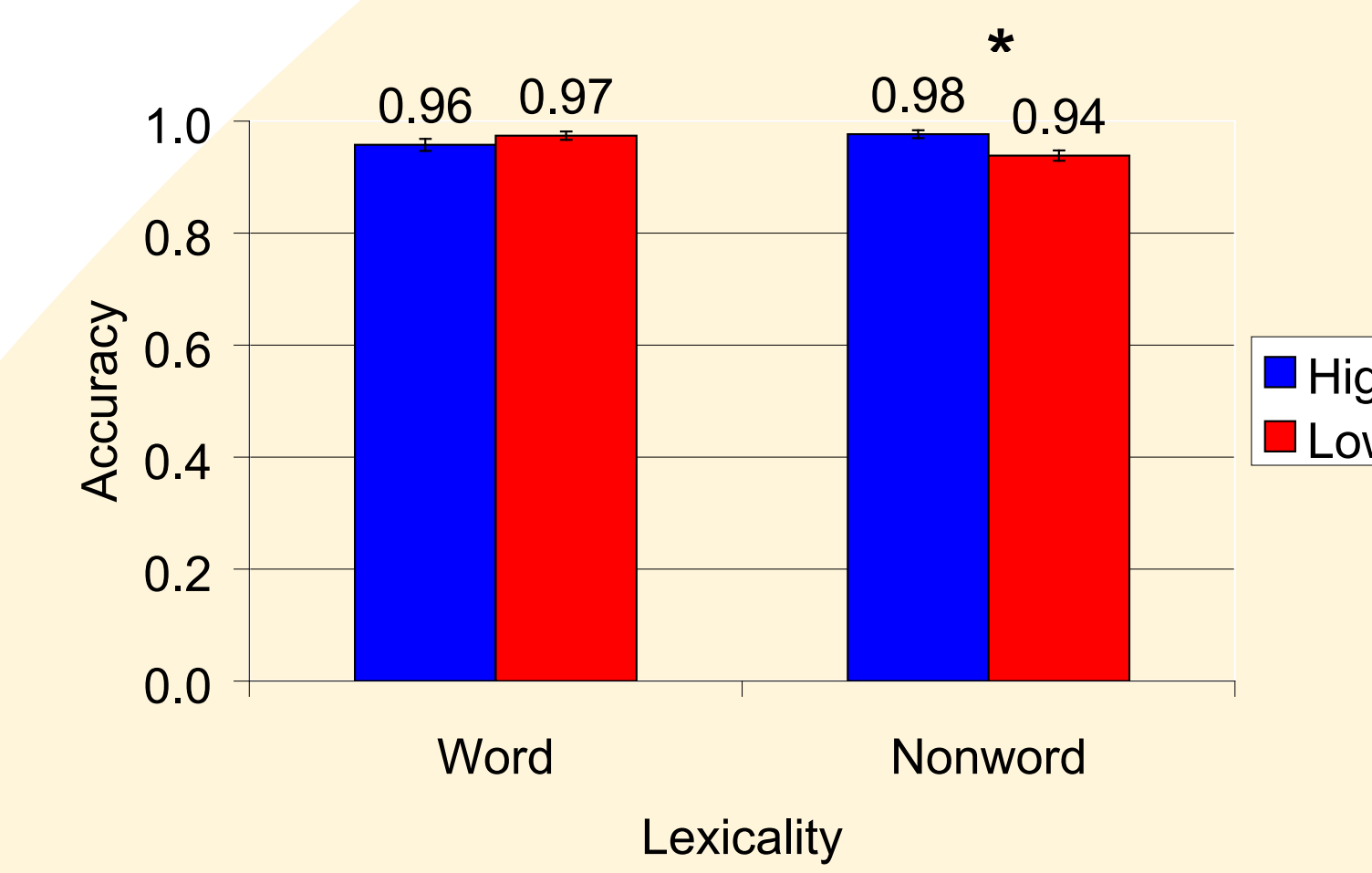
### Same-different task

- Ss heard two stimuli and judged same/different with button responses
  - Same/Different
    - Same = test stimuli
    - Different = fillers
- Words vs. nonwords blocked and counterbalanced across Ss
  - Accuracy and RT measured

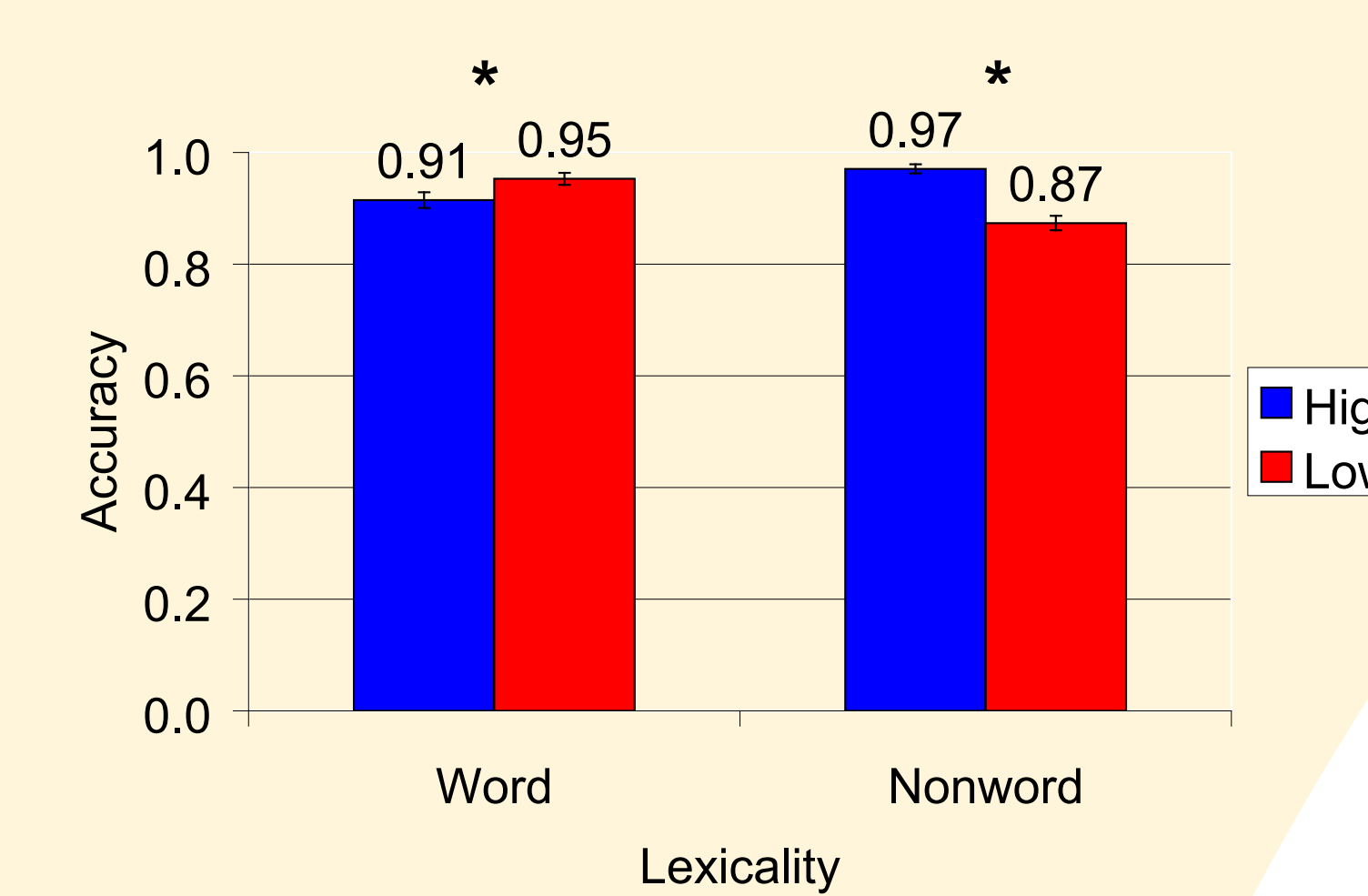
## Results

### Accuracy

- Native English Group

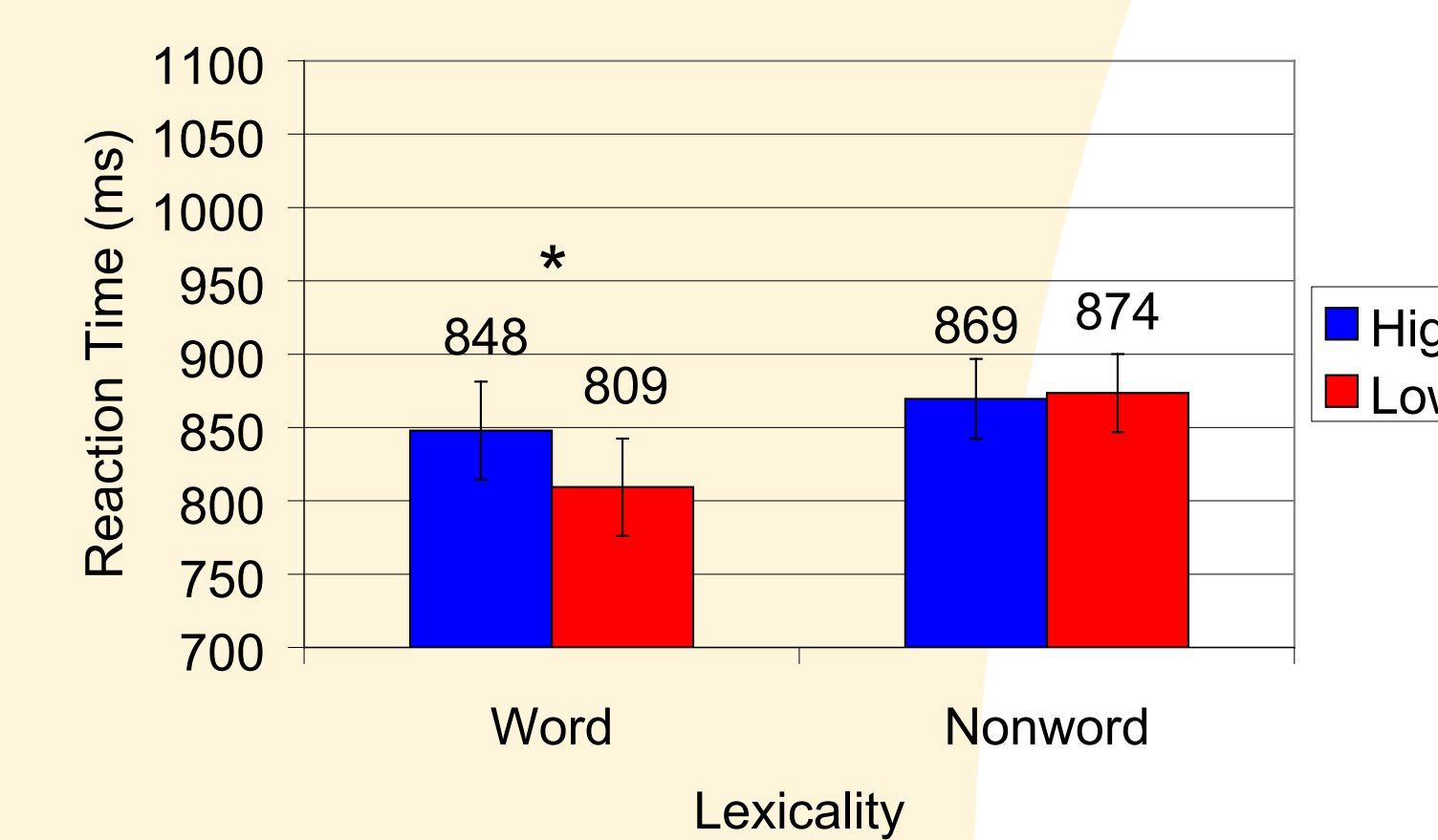


- L2 English Group

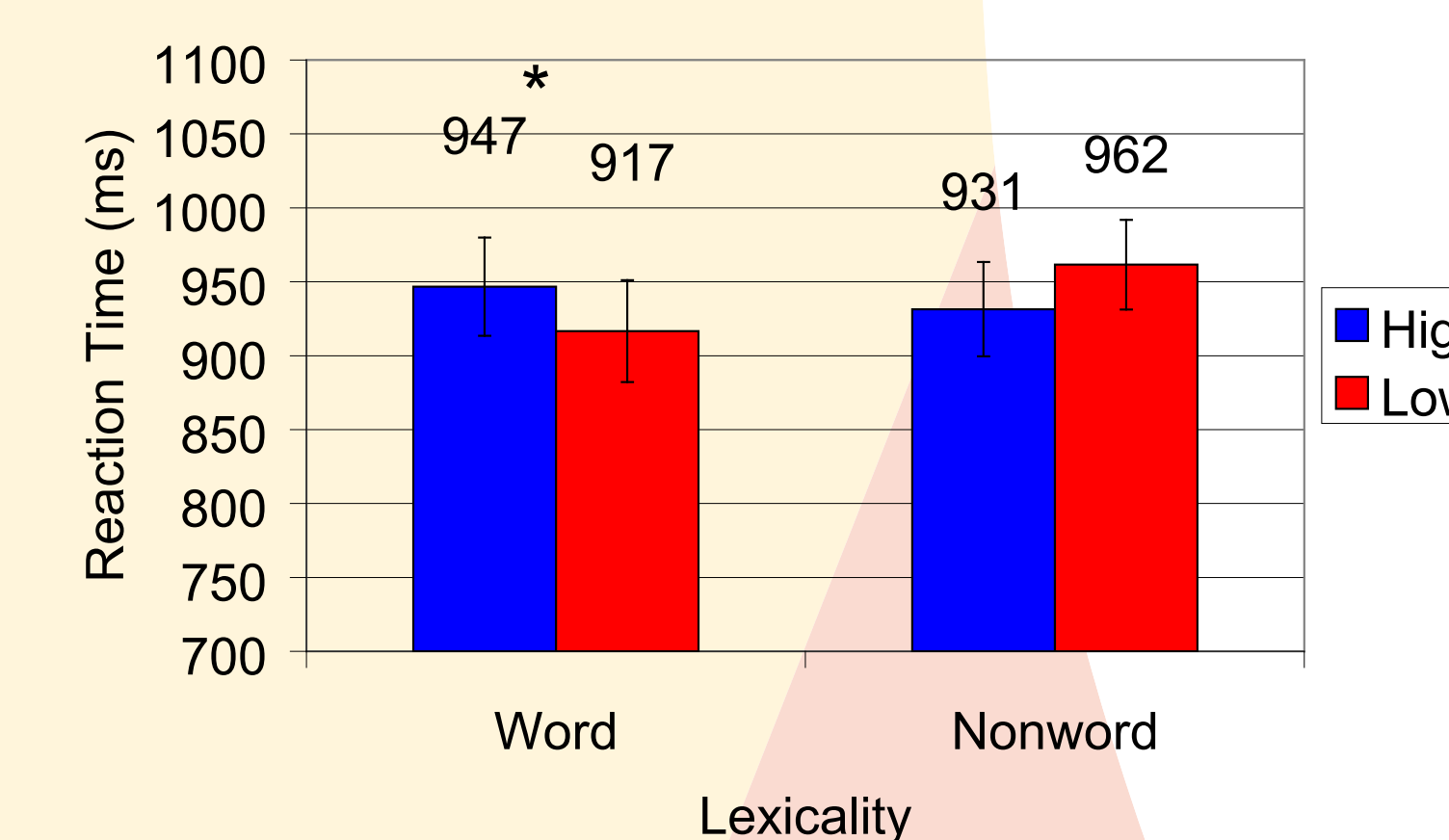


### RT

- Native English Group



- L2 English Group



## Summary and conclusion

Patterns similar between Native English and L2 English

- Significant interaction of lexicality x probability/density
  - Words: low probability/density words were recognized more easily than low probability/density words
  - Nonwords: high probability/density nonwords were recognized more easily than high probability/density nonwords

Native speakers and L2 learners are similar in organizing and processing English words/nonwords

- Lexical → competition
- Sublexical → facilitation

## Future directions

Additional evidence with different L1 groups

Phonological factors

- L1-L2 mismatch

Individual differences within an L2 group

- Proficiency levels

For more information  
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