**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

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

**Method**

### Participants

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

### Stimuli

- 68 CVC
  - High PP/D
  - Low PP/D

### Same-different task

- Ss heard two stimuli and judged same/different with button responses
  - Same/Different
    - Same = test stimuli
    - Different = fillers

### 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?

**Results**

### Accuracy

#### Native English Group

<table>
<thead>
<tr>
<th>Lexicality</th>
<th>Word</th>
<th>Nonword</th>
</tr>
</thead>
<tbody>
<tr>
<td>High PP/D</td>
<td>0.96</td>
<td>0.94</td>
</tr>
<tr>
<td>Low PP/D</td>
<td>0.98</td>
<td>0.97</td>
</tr>
</tbody>
</table>

#### L2 English Group

<table>
<thead>
<tr>
<th>Lexicality</th>
<th>Word</th>
<th>Nonword</th>
</tr>
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<tbody>
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</tr>
</tbody>
</table>

### RT

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<table>
<thead>
<tr>
<th>Lexicality</th>
<th>Word</th>
<th>Nonword</th>
</tr>
</thead>
<tbody>
<tr>
<td>High PP/D</td>
<td>869</td>
<td>809</td>
</tr>
<tr>
<td>Low PP/D</td>
<td>848</td>
<td>700</td>
</tr>
</tbody>
</table>

#### L2 English Group

<table>
<thead>
<tr>
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<th>Word</th>
<th>Nonword</th>
</tr>
</thead>
<tbody>
<tr>
<td>High PP/D</td>
<td>931</td>
<td>917</td>
</tr>
<tr>
<td>Low PP/D</td>
<td>947</td>
<td>962</td>
</tr>
</tbody>
</table>

**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

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**Word recognition**

- Accuracy
  - Native English Group
  - L2 English Group

**RT**

- Native English Group
  - L2 English Group