Design and Evaluation of Korean Text Entry Methods for Mobile Phones

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Motivation

- over 38M people use mobile phones in Korea
- many mobile services require intuitive, effective, and efficient mechanisms for text entry
- Korean text entry for mobile phones not standardized yet

Korean Script

- alphabetic (10 vowels, 14 consonants)
- letters within syllables are stacked based on predefined rules

Existing Text Entry Methods

**Chon-ji-in**

- multi-tap method for consonants (key used to disambiguate)
- vowels composed using ㅏ · ㅓ
- relatively easy to learn; requires more strokes in general

**EZ-Hangul**

- consonants composed using adding a stroke and doubling
- vowels composed by multi-tap, adding a stroke
- steeper learning curve; requires fewer key strokes
- eliminates conflicts (no disambiguation necessary)
Goals:
- promote recognition
- facilitate faster learning
- reduce number of key strokes per letter
- vowels arranged based on shape
- consonants arranged similar to Chon-ji-in

Analytical Evaluation

- input text has 90314 words, 251556 syllables, and 714336 letters

Key Strokes Per Letter

<table>
<thead>
<tr>
<th></th>
<th>vowels</th>
<th>consonants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Chon-ji-in</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>EZ-Hangul</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

Fitt's Predicted Move Time Per Letter

Predicted vs Actual Time