Ambiguity advantage effect by the number of objective meanings or subjective meanings?

Yoonhye Na, Jimwon Kang, and Kichun Nam
(Department of Psychology, Korea University)

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Abstract Three experiments were performed to examine whether the ambiguity advantage effect is determined by the number of meanings of Korean dictionary or of meanings consciously retrieved and to see if that effect is task-specific. In experiment 1 and 2, the lexical decision task was used, and in experiment 3, the word naming task was employed. The results of the experiment 1 and 2 showed the ambiguity advantage effect is mostly modulated by the number of meanings reported consciously by subjects not by the count of dictionary meanings. And also this effect was found in the word naming task, implicating that this effect is caused by the lexical stages common to two different tasks of lexical decision and naming.

Introduction The lexical ambiguity effect looks strange, because the words having more meanings are recognized faster. Usually if the information associated with words is more complex, then the processing load is higher and this processing burden makes the word recognition more difficult. As shown in the following references, many research results were reported, but it is not clear about whether the number of word meanings is defined on the basis of the meanings written in the dictionary or on the basis of the word meanings retrieved voluntarily by the word users. Also, it is not shown that this lexical ambiguity effect is task-dependent or not. The current study was conducted to resolve these issues. Three Korean word experiments were designed and lexical and naming data were collected and analyzed.

Method

Exp1. Stimuli 250 words which have only one meaning to multiple meanings and 250 non-words were used. Procedure They asked to press the “/” button when the stimuli was a real word and press the “z” button when the stimuli was non-word as fast and accurately as possible.

Exp2. Stimuli 50 ambiguous words and 50 non-ambiguous words matched with frequency were used. Ambiguous words were divided into two types of ambiguity, semantically-related and non-related ambiguous words.

Procedure Same as in Experiment 1.

Exp3. Stimuli Same as in experiment 2 except for non-words. Procedure Participant were seated in the sound-attenuated room individually, and they were asked to read the word out loud as fast as possible.

Results and Discussions The following table 1 presents the results of Experiment 1. As indicated, the regression analysis of lexical latencies and lexical variables like the number of meanings and word frequency was used. The analysis results shows that the word frequency has strongly associated with lexical times and the number of consciously recollected meanings has significantly stronger relation with lexical latencies than the number of meanings written in dictionary. But this result does not implicate the causal relationship between word recognition times and the number of consciously recollected meanings, because the employed variables were not controlled orthogonally. As explained in the other section, Experiment 2 was the experimental design research to see this causality.

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of consciously recollected meanings</td>
<td>-320</td>
<td>.00</td>
</tr>
<tr>
<td>Log Frequency</td>
<td>-158</td>
<td>.01</td>
</tr>
<tr>
<td>Number of meanings written in dictionary</td>
<td>-160</td>
<td>.02</td>
</tr>
</tbody>
</table>

Table 1. Results of regression analysis of lexical latencies and lexical variables like the number of meanings and word frequency

Figure 1 presents the results of Experiment 2, showing that the significant lexical speed differences exist between neutral and ambiguous words and between the irrelevant and relevant meaning words. Summarizing the results of Experiment 1 and 2, it is evident that the lexical ambiguity effect is modulated by the number of consciously recollected meanings.

The following figure 2 shows the naming results of the significant naming differences between neutral and ambiguous words and between the irrelevant and relevant meaning words, and this results are very similar to the above two experiment results to implicate the lexical ambiguity advantage effect caused by the lexical stages common to two different tasks of lexical decision and naming.

References


