The Role of Associations in Recognition of Mimetic and Imitative Words

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This study investigated how associations affect the recognition of mimetic and imitative words. Associations play a very important role in word recognition, and mimetic / imitative words become a strong cue to recall target words. When we recall mimetic / imitative words in themselves, however, these associations rather interfere with recalling target words. For example, when "pouring" which associates "rain" is target, we would recall "misty" which also associates with "rain" instead of the target. Association would distort memory of mimetic / imitative words.
Experiment 1 investigated how the association distorted the memory of mimetic / imitative words. It was predicted that participants would recall non-target words which have same association with target words. Experiment 2 investigated whether the distortion of memory in Experiment 1 affected productions of mimetic / imitative words. It was predicted that the larger distortion of memory would affect productions of mimetic / imitative words.

Experiment 1

In this session, participants performed both word association task and incidental recognition task. Sixty mimetic / imitative words were used which the half of these words was target words and else was filler words. Each target corresponded to one filler word which had same associative word (For example, when a target was "twinkle", the filler was "brightly". Both associate with "star"). Participants were 89 female students that were all native Japanese speakers. In association task, only target words were used. While one target word was presented with a projector for one minute, participants wrote down semantic relative words to the targets freely. After the dummy task (memory span task), we employed an incidental recognition task. In this session, thirty targets and thirty filler words were presented. Participants were required to respond to the targets.

Results and Discussion

The rate of false alarm and miss were 0.09 and 0.07, respectively. Participants could discriminate between targets and fillers correctly. Memory span task was so easy that participants' memory of targets was not distorted by the dummy task. Productivity for each word was very different, so the range of rate for false alarm and miss was very wide (0 - 0.37).

Experiment 2

Three weeks after Experiment 1, participants performed priming task. Thirty sentences with a blank were used (ex. "His wear is _____."). While one sentence was presented with projector for one minute, participants requested to fill in the blank with one appropriate mimetic / imitative word. The blank of each sentence could be filled with both target and filler mimetic / imitative words.

Results

Targets were divided according to the results of Experiment 1 in two groups: higher miss rate group (HM) and lower miss rate group (LM) and counted the numbers of productions for target and filler words. The target words were recalled more than the filler words in HM group, meanwhile the filler words were recalled more than the target words in LM group ($\chi^2 = 19.70$, $p < .001$).

Table 1: Results of HM and LM groups

	Targets	Filler	Total
HM	369	365	734
LM	230	373	603
Total	599	738	1337

Targets were also divided into higher false alarm rate (HF) group and lower false alarm rate (LF) group. Table 2 shows the results of HF and LF. HF showed that filler words were recalled more than the target words, meanwhile LF showed that targets words were recalled more than the filler words ($\chi^2 = 19.96$, $p < .001$).

Table 2: Results of HF and LF groups

	Targets	Filler	Total
HF	303	463	766
LF	296	275	571
Total	599	738	1337

General Discussion

The results did not support the hypothesis because the target words were recalled more than filler words in HM groups. Although participants missed these targets, they recalled the missed targets.
The association between the sentences and target words probably became weaker in HM stimuli. Some participants indicated after the experiments that some target mimetic / imitative words were not appropriate for the presented sentences in HM group. Adding to this, some target and filler words were not familiar to participants. Familiarity affects stronger to the production of mimetic / imitative words than the effects of incidental learning. False alarm maybe occurred from familiarity, so filler words were recalled more in HF than in LF. This study suggested that context and familiarity, rather than the results of an incidental learning, would affect production of mimetic / imitative words.