

# How do we categorize known and unknown ideophones?

## A case study of Japanese reduplicated ideophones

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Ideophones are defined as “marked words depictive of sensory imagery found in many of the world’s languages” (Dingemanse 2012). Because of their depictive function or iconicity, ideophones are taken as a clue to explore linguistic evolution by many, most notably Haiman(2018). To judge whether a word is iconic, the similarity between its meaning and the image aroused by its form is evaluated. This means that we must know the meaning associated with the form before the judgment. Then, is it possible to find ideophones from unknown words (i.e., just by forms)? To determine how speakers detect ideophones from candidate forms, we conducted a questionnaire survey and analyzed the data.

Our target language was Japanese, which is known to be rich in ideophones (Hamano 1998). Since two repeated moras ((C<sub>1</sub>)V<sub>1</sub>(C<sub>2</sub>)V<sub>2</sub>–(C<sub>1</sub>)V<sub>1</sub>(C<sub>2</sub>)V<sub>2</sub>), such as *kirakira* (shiny), is the most common form of Japanese ideophone, we extracted all the reduplicated two moras from the NINJAL Web Japanese Corpus (Asahara et al. 2014), 844 words in total.

In the survey, we asked participants the following questions for each word: (1) Do you know this word? (2) Do you think it is an ideophone? (3) Can you imagine the sense it expresses? (4) Do you think it expresses a sound or a voice? (5) Do you think it expresses a condition or an emotion? There were 674 participants on Yahoo! Japan Crowdsourcing, and each participant was allowed to answer questions on 10 words at most. The participants answered by rating on a scale of 0–2 for question (1) and 0–5 for questions (2)–(5).

First, we performed a correlation analysis to determine whether the speaker sees ideophones as expressing sensory imagery according to the linguistic definition. The average ratings for ideophones (2) and sensory imagery (3) for all 844 types were positively correlated (0.89,  $p < 0.05$ ). Moreover, this positive correlation was significant (0.69,  $p < 0.05$ ) even for the words that >75% of speakers did not know. Second, we analyzed the rating for ideophones (2) using factors (1) and (3)–(5) using linear regression. The results show that while the familiarity factor (1) is not correlated for the rating for ideophones, factors (3)–(5) are positively correlated ( $p < 0.05$ ).

Our results show that Japanese speakers see ideophones as words that express sensory imagery regardless of their iconicity. We also found that speakers could categorize words that they had never seen before as ideophones. For example, while both had extremely low familiarity rates, “*afuafu*” was often categorized as an ideophone but not “*kafukafu*” despite the similarity in form.

Schmid(2008) proposed three stages of the establishment of new words: creation, consolidation, and establishing. Our results are the first step toward showing how a newly created ideophone can be shared by others and open the possibility of proceeding from the first to the second stage of establishment. As a next step, we plan to investigate the conditions speakers use to distinguish between ideophones and non-ideophones among unknown words.

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