

## Impression of the Sound of Rain Hitting Umbrellas

Kana Yamaguchi

We hear the sound of rain in our daily lives not only on rainy days but also as sound effects to depict scenes. Nevertheless, it has not been clarified what kind of impression the sound gives has not been clarified. Here, we investigated the impression of the sound when rain hits umbrellas. Although many adjective pairs have been proposed to evaluate the sound of musical instruments etc., it was unclear if they were appropriate for evaluating the sound of rain-hitting umbrellas. Therefore, we first interviewed umbrella specialists to collect adjectives that describe the sound of rain hitting umbrellas. Through the interview, we obtained 46 pairs of adjectives to describe the impression given by the sound of umbrellas. We then recorded 30 sets with different umbrellas (including Japanese and western styles) and the magnitude of rain. Finally, we asked 20 participants ( $21.2 \pm 1.0$  years, five men and fifteen women) to rate the impressions by hearing the recordings with 46 pairs of adjectives. As a result, four axes of structure of impression evaluation were found: “tactile impressions,” “physical properties,” “shape and material,” and “evoked emotions.” We believe our findings can be applied to product development and entertainment.

(Supervisor Yoichi Ochiai)