

Does Japanese have language-specific sound symbolism? A comparison with English and French.

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Sound symbolism, or the inherent connection between linguistic sounds and perceptual properties (Hinton et al. 1994; Köhler 1929/1947), has been assumed to be universal. For instance, voiceless obstruents like /k/ are associated with angular shapes cross-linguistically, as the “bouba-kiki” effect suggests (Ramachandran & Hubbard 2001). Since sound symbolism points to non-arbitrary aspects of linguistic signs, it can contribute to the cognitive-linguistic inquiry into language. However, it has recently been suggested that cross-linguistic variability may exist in at least some aspects of sound symbolism. For example, English and Japanese speakers associate voicing in obstruents with the property of “hardness” differently: English speakers tend to perceive voiceless obstruents (e.g., /p/) as “harder” than voiced obstruents (e.g., /b/), while Japanese speakers tend to have the opposite perception (Shinohara et al. 2017, Kumagai et al. 2022). The current study addresses this understudied issue of cross-linguistic variability in sound symbolism.

Building upon previous findings, we explored how French speakers associate voicing in obstruents with “hardness” to see whether French is grouped with English or with Japanese. In particular, we tested whether French speakers perceived voiced obstruents as “softer” than voiceless obstruents, as English speakers do, or if they perceived voiced obstruents as “harder” than voiceless obstruents, as Japanese speakers do. To this end, we conducted two online experiments.

In Experiment 1 (preliminary experiment), 18 disyllabic pseudo-words with the CVCV form, completely balanced for voicing in consonants (voiced, voiceless), places of articulation (bilabial, alveolar, velar), and vowels (/a, e, o/), were randomly presented to 70 English speakers on web pages. Each stimulus had a word-final /i/, as in /popoi/, so that none of them were existing words. Each participant evaluated how hard or soft each word sounded on a five-point scale, ranging from “very hard” to “very soft.” Statistical analysis of the results showed that voiceless obstruents were perceived as significantly harder than voiced obstruents ($p < 0.01$). Experiment 2 asked the same questions of 76 French speakers. Very similar results were obtained: The French-speaking participants tended to evaluate voiceless obstruents as harder than voiced obstruents ($p < 0.01$). These results contrast with the previously reported tendencies of Japanese speakers to perceive voiceless obstruents as “softer” (Shinohara et al. 2017).

In conclusion, our results demonstrate that French-speakers are similar to English-speakers in terms of their perceptions of the sound symbolism of “hardness.” The “voiceless–hard” association seen in these languages is natural because the tendency is in line with the “sonority hierarchy,” in which voiced obstruents are higher in sonority than voiceless obstruents (Parker 2002), and with the previous finding that sonorants tend to be associated with softness (Shinohara & Uno 2022). On the other hand, Japanese may have language-specific tendencies in the sound symbolism of hardness, perhaps motivated by the systematicity in the structure of mimetics (Akita 2016). Japanese mimetics have systematic oppositions in which voiced obstruents mean harder, heavier, larger, or darker properties than voiceless obstruents do (Hamano 1998). This systematicity may be motivating the language-specific sound symbolic associations seen in Japanese.

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