

Cuteness modulates size sound symbolism at its extremes

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The phenomenon of sound symbolism describes that certain sounds become meaningful when they are combined with other sensory information. One of the most prominent types of sound symbolic patterns is the so-called “size sound symbolism”. Speech sounds with high-frequency components are associated with smallness, while speech sounds with low-frequency components are associated with bigness (e.g. Tarte 1982; Knoeferle et al. 2017). While size sound symbolism is well researched in itself, there is barely any research available connecting size to other dimensions of appearance. The present investigation aims at providing evidence for this research gap.

The dimension of size has been under investigation in a multitude of studies on sound symbolism during the last decades (e.g. Berlin 1995; Blasi et al. 2016). A further dimension of appearance, however, has rarely been considered by research: cuteness. Cuteness can be understood as a more complex form of simple geometric shape, as has been studied before (e.g. Westbury et al. 2018; Bremner et al. 2013; D’Onofrio 2013). Cuteness, especially from its biological perspective as comprised in the so-called “baby schema” (Lehmann, Huis in’t Veld & Vingerhoets 2013), is a fundamental feature of human perception and correlates, among other things, with size (Kringelbach et al. 2016). Research on Japanese has shown that cuteness is also found as sensory information to be combined with speech sound (Kumagai 2019).

Taking into account both dimensions, size and cuteness, the present investigation aims at establishing a relation from “small” to “big” and from “not cute” to “cute” for long vowels of Standard German (i.e. /a:, ε:, e:, i:, o:, ø:, u:, y:/), providing further insight into sound symbolism and its nature.

To gain evidence, an online forced-choice task was conducted using OpenSesame (Mathôt, Schreij & Theeuwes 2012). Disyllabic pseudowords were used as auditory stimuli, controlling for potentially confounding lexical (Caselli, Caselli & Cohen-Goldberg 2016; Gahl 2008) and contextual (Klatt 1976; Wightman et al. 1992) effects. In either syllable, stimuli’s nuclei consisted of one of the vowels under investigation. The simplex onsets of the syllables consisted of one consonant, i.e. /d, f, j, k/ or /t/. There were no coda consonants. In total, 96 pseudowords, i.e. 12 per vowel, were used. Images of phantasy creatures (van de Vijver & Baer-Henney 2014) were used as visual stimuli. In each trial, participants were shown five differently sized versions of a randomly chosen creature. The participants’ task was to decide which image version matched the audio stimulus of a trial best. As cuteness judgements most likely differ by participants, after the forced-choice part of the experiment, participants were again shown all creature images to judge them for their cuteness on a five point scale.

The size response then entered a generalised additive mixed model regression analysis as dependent variable. Cuteness judgments, vowel quality, as well as onset consonant types and phonological neighbourhood density were introduced as independent variables, while participant ID and age were included as random effects. Overall, /a:/ is considered bigger than all other vowels, while /u:, i:/ are considered smallest. Cuteness judgement ratings did not show a significant effect on their own. However, having vowel quality and cuteness judgements interact, a noteworthy pattern emerged: For the open vowel /a:/ and for the close front vowels /u:, i:/, the interaction reached significance. While the size judgements for /a:/ further increased with cuteness, the size judgements for /u:, i:/ further decreased.

The present findings demonstrate that the dimension of cuteness modulates the effect of size sound symbolism at its extremes. That is, with increasing cuteness, the vowel considered to be biggest is judged to be even bigger, while the vowels considered to be smallest are judged to

be even smaller. Sound symbolic effects appear to manifest in an intricate interaction when multiple dimensions of sensory information are taken into account. The present findings contribute to the growing body of evidence for and the nature of sound symbolism and call for the incorporation of multiple dimensions of sensory information where applicable.

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