Sound symbolic interactions of cuteness and size in German long vowels

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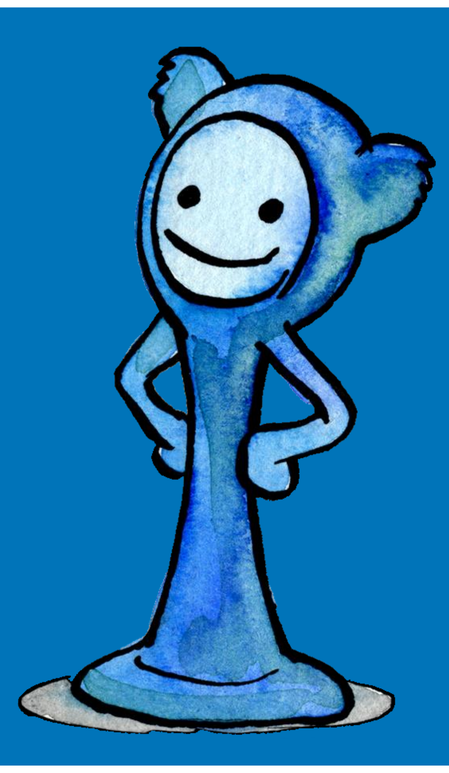
Cuteness modulates size sound symbolism at its extremes



Background & Motivation

- sound symbolism is a specific form of cross-modal correspondence
  - ➔ certain sounds are associated with certain sensory information
- prominent examples of sound symbolism concern size [1-4] and shape [5-8]
- a diverse range of types of sensory information has been investigated
- however, barely any research on combinations of different types of sensory information
- **RQ:** Does one type of sensory information influence another type's sound symbolic effect?

Method

size associations: forced-choice task

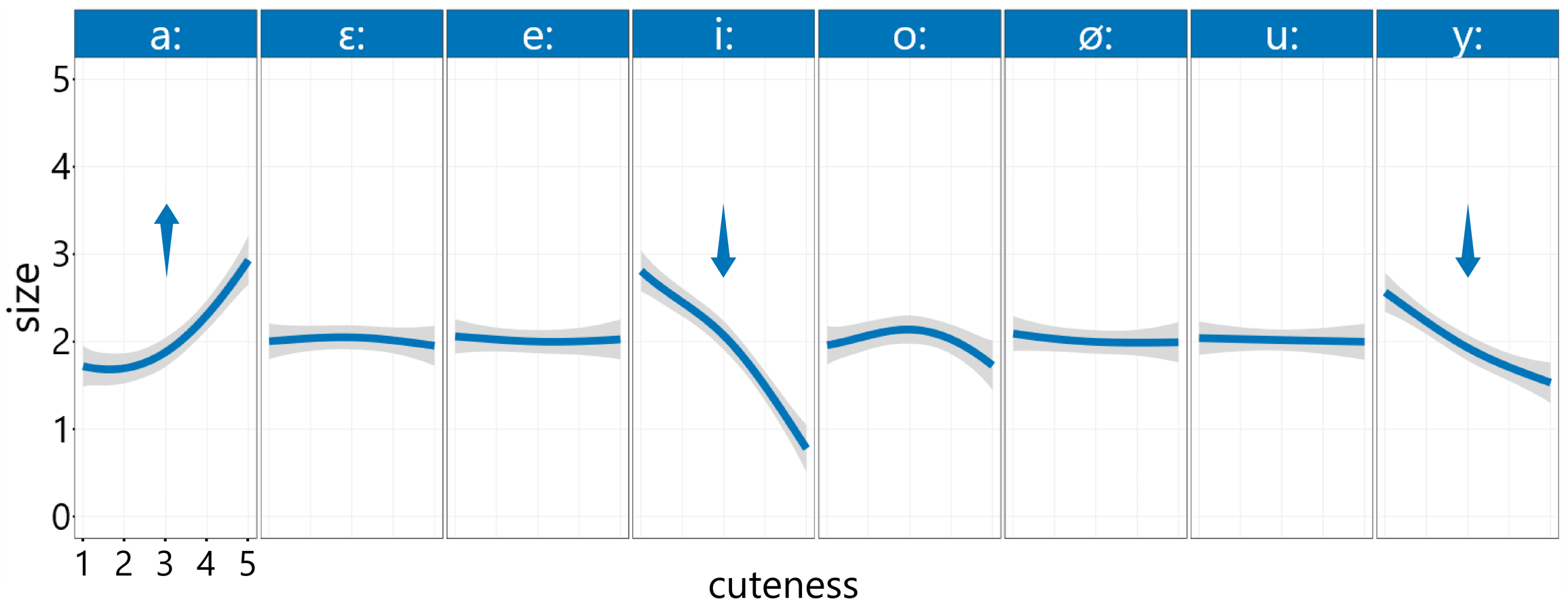
- **auditory stimuli:** 96 CV.CV pseudowords
- **visual stimuli:** images of alien creatures [9]
- **procedure:** participants chose which one of 5 differently sized versions of a visual stimulus matched the presented audio stimulus best

cuteness judgement task

- **visual stimuli:** images of alien-like creatures
- **procedure:** participants judged all visual stimuli for cuteness on a 5-point Likert scale

Analysis

- 124 participants, 10319 data points
- ordinal logistic regression in generalised additive mixed models [10] with
  - **dependent variable:** size association
  - **predictors of interest:** vowel & cuteness
  - also included: onset consonants, phonological neighbourhood density, age, L1, L2
- vowel and cuteness are introduced as **interaction**
  - ➔ we want to see whether cuteness influences the size sound symbolic effects of vowels



Discussion

- How can we explain this novel finding?
  - /iː/ and /yː/
    infants mostly produce high frequency vowel-like sounds [11-12]
    ➔ **infant schema** ➔ cuteness
  - /aː/
    infants have proportionally big heads and eyes [11-12]
    ➔ **infant schema** ➔ cuteness
- cuteness influences the size sound symbolic effects of vowels
  - ➔ one type of sensory information influence another type's sound symbolic effect
  - ➔ potential interactions of different types of sensory information must be considered in research on sound symbolism

Stimuli

- nucleus
  /aː, ɛː, eː, iː, oː, øː, uː, yː/
- onset
  /d, f, j, k, ʁ/

C	V		C	V	
d			d		
f	aː	ɛː	f	aː	ɛː
j	eː	iː	j	eː	iː
k	oː	øː	k	oː	øː
d, f, j, k	uː	yː	ʁ	uː	yː
ʁ			d, f, j, k		

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References **[1]** Berlin, Brent. 2006. The First Congress of Ethnozoological Nomenclature. *Journal of the Royal Anthropological Institute* 12(s1). 23–44. https://doi.org/10.1111/j.1467-9655.2006.00271.x. **[2]** Blasi, Damián E., Søren Wichmann, Harald Hammarström, Peter F. Stadler & Morten H. Christiansen. 2016. Sound-meaning association biases evidenced across thousands of languages. *Proceedings of the National Academy of Sciences of the United States of America* 113(39). 10818–10823. https://doi.org/10.1073/PNAS.1605782113. **[3]** Johansson, Niklas. 2017. Tracking linguistic primitives. In Angelika Zirker, Matthias Bauer, Olga Fischer & Christina Ljungberg (eds.), *Dimensions of iconicity*, 39–62. Amsterdam: John Benjamins. https://doi.org/10.1075/ill.15.03joh. **[4]** Westbury, Chris, Geoff Hollis, David M. Sidhu & Penny M. Pexman. 2018. Weighing up the evidence for sound symbolism: Distributional properties predict cue strength. *Journal of Memory and Language* 122–150. https://doi.org/10.1016/J.JML.2017.09.006. **[5]** Ćwiek, Aleksandra, Susanne Fuchs, Christoph Draxler, Eva Liina Asu, Dan Dediu, Katri Hiovain, Shigeto Kawahara, et al. 2022. The bouba/kiki effect is robust across cultures and writing systems. *Philosophical Transactions of the Royal Society B: Biological Sciences* 377(1841). https://doi.org/10.1098/rstb.2020.0390. **[6]** Kawahara, Shigeto & Kazuko Shinohara. 2012. A tripartite trans-modal relationship among sounds, shapes and emotions: A case of abrupt modulation. In *Proceedings of the Annual Meeting of the Cognitive Science Society*. **[7]** Köhler, Wolfgang. 1929. *Gestalt psychology*. New York: Liveright. **[8]** Ramachandran, V. & E. Hubbard. 2001. Synaesthesia: A window into perception, thought and language. *Journal of Consciousness Studies* 8(12). **[9]** Vijver, Ruben van de & Dinah Baer-Henney. 2014. Developing biases. *Frontiers in Psychology* 5. https://doi.org/10.3389/fpsyg.2014.00634. **[10]** Wood, Simon N. 2017. *Generalized additive models: An introduction with R*. CRC Press. https://doi.org/10.1201/9781315370279. **[11]** Lehmann, Vicky, Elisabeth M.J. Huis in't Veld & Ad J.J.M. Vingerhoets. 2013. The human and animal baby schema effect: Correlates of individual differences. *Behavioural Processes* 94. 99–108. https://doi.org/10.1016/j.beproc.2013.01.001. **[12]** Kringelbach, Morten L., Eloise A. Stark, Catherine Alexander, Marc H. Bornstein & Alan Stein. 2016. On cuteness: Unlocking the parental brain and beyond. *Trends in Cognitive Sciences* 20(7). 545–558. https://doi.org/10.1016/j.tics.2016.05.003.