

Government of the Russian Federation
Saint Petersburg State University

**Proceedings of the 4th International Conference
on Neurobiology of Speech and Language**

Organised by the Laboratory of Behavioural Neurodynamics,
Saint Petersburg State University

November, 2020

Edited by Olga Shcherbakova



Saint Petersburg, Russia

Discussion. This is the first attempt to create a comprehensive database of general-knowledge questions in Russian language. This database can be used to better control conditions in surveys, psychological, educational and neuroscientific studies.

Recently accepted manuscript reporting this research can be accessed here: <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.545304/full>

This study was funded by the Russian Science Foundation (RSF 19-18-00534).

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Pitch and size in cognitive processing of verbal and non-verbal stimuli

This paper presents the study of cross-modal correspondences between audial and visual features. Cross-modal correspondences and interactions play an important role in embodied cognition. Previous studies indicate that there is a correspondence between pitch and size (Marks, Hammeal, & Bornstein, 1987; Mondloch et al., 2006). We explored how deep such cross-modal correspondences can be and whether they remain present for verbal stimuli. We used two pure tones (high 1500 Hz or low 1000 Hz). We studied visual feature (size) on different levels, beginning with real objects (circles) and going further to the words with 'size' component in semantics. The purpose was to widen the knowledge about the correspondences of auditory and visual modalities and to increase the efficiency of processing signals from the outside world coming from different channels of perception.

In order to verify the validity of the cross-modal correspondences we carried out 3 experiments. The 1st experiment partially replicated the (Evans, Treisman, 2010) paper. The sample comprised 40 participants (18 to 23 y.o.) in the 1st experiment; 40 (18 to 22 y.o.) in the 2nd, and 31 (20 to 25 y.o.) in the 3rd experiment. They performed the speeded classification task evaluating audial stimuli. The procedures of the 3 experiments were similar. Each experiment consisted of 2 conditions (congruent, incongruent). Respondents heard a pure tone (high or low) played for 120

ms through the speakers and discriminated it by pressing the necessary key on the keyboard. In the 1st experiment, participants saw a circle (big or small), when they heard a pure tone (high or low). In the 2nd and 3rd experiments, respondents saw a word with semantic component of 'size', which differed for each of the experiments. The words "большой" and "маленький" (adjectives) in which 'size' is the main semantic component were used in the 2nd experiment. In the 3rd we used words (nouns) in which component 'size' was peripheral ("муха", "башня"). The stimuli in the 1st and 2nd experiment were presented using program E-Prime 2.0. The 3rd experiment was held online. The dependent variable in these studies was reaction time (RT) measured for correct trials only.

The 1st and the 2nd experiments revealed cross-modal correspondence. Participants' responses were faster when they saw a small circle and heard a tone with a high pitch (congruent case) than in the incongruent case ($p = .027$). When respondents saw a word with semantic component 'small' and a congruent sound, their RT was less than that in case a word was accompanied by an incongruent sound ($p = .013$). In the 3rd experiment, we did not get statistically significant results. The reason for this might be the online approach or the fact that the 'size' component in semantics was not clear enough.

Thus, cross-modal correspondence can be observed in verbal stimuli, but it depends on the intensity of the semantic component of 'size'.

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Emotion manifestation in speech and facial expression in children with autism spectrum disorders and Down syndrome

The presented study is part of the research of speech and voice features in children with atypical development (Lyakso et al., 2016–2020). The aim of the study was to reveal the abilities of children with autism spectrum disorders (ASD) and Down syndrome (DS): 1. to recognize the emotional