Vitaly Babenko

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Education

1974–1979 **Specialist**, *Rostov State University*, Rostov-on-Don, *Biologist*.

Cand. Sc. (PhD) thesis

title *Dynamics of the visual cortex activity at a sound stimulation in terms of evoked potentials (Rus)*

supervisors Prof. Aleksandr B. Kogan

Dr. Sc. thesis

title *Mechanisms of visual segmentation (Rus)*

supervisors Prof. Grigory A. Kuraev

description It was found that the universal grouping of the local visual information is the final stage of preattentive processing

Experience

Vocational

1979–1997 **Engineer, Junior Researcher, Researcher, Senior Researcher**, *A.B. Kogan Research Institute for Neurocybernetics, Rostov State University*, Rostov-on-Don.

1997–2005 **Vice Director**, *Educational and Research Institute of Healthcare Science, Rostov State University*, Rostov-on-Don.

2005–2016 **Professor**, *Department of Psychophysiology and Clinical Psychology, Academy of Psychology and Educational Sciences, Southern Federal University*, Rostov-on-Don.

Languages

Russian **Mothertongue**

English **Upper-Intermediate**

Computer skills

OS	MS DOS, MS Windows	Statistical software	Statsoft Statistica
Office software	MS Office, LibreOffice	Programming languages	Pascal

Research projects

- RFH: Spatial characteristics of visual mechanisms that group the local information, 2008 – 2010 (Rus)
- RFH: Spatio-temporal features of the electrical activity organization of the human brain cortex in parallel and sequential processing of visual information, 2009 – 2010 (Rus)
- Federal Agency for Education of Russia: Features of the cerebral hemispheres interaction in human while solving the cognitive tasks of different levels, 2009 – 2010 (Rus)
- Ministry of Education and Science of Russia: Functional interaction between the cerebral hemispheres of the human brain in the implementation of mental functions at different levels of the cognitive system, 2011 (Rus)
- RFH: Cortical dynamics of activity evoked by the second order visual stimuli, 2012-2013 (Rus)
- Ministry of Education and Science of Russia: The role of the hemispheres of the human brain in the implementation of cognitive functions related to perception, attention, memory, 2012 – 2013 (Rus)
- Ministry of Education and Science of Russia: Formation of perceptual images belonging to the categorical system of knowledge (cognitive model of the world): interhemispheric psychophysiological mechanisms, 2014-2016 (Rus)
- Ministry of Education and Science of Russia: Hemispheric interaction in the implementation of human brain cognitive 'technologies', 2014-2016 (Rus)

Selected theses, articles and books

V. K. Filimonov and V. V. Babenko, "Changes in the configuration of primary responses of the visual cortex upon increasing the intensity of background acoustic stimuli over threshold values (rus)," *Zhurnal vysshei nervnoi deiatelnosti imeni I P Pavlova*, vol. 31, no. 4, pp. 852–4, 1981.

V. V. Babenko and M. K. Chipizubova, "Evoked potentials to sound in the visual cortex in the cat (rus)," *Zhurnal vysshei nervnoi deiatelnosti imeni I P Pavlova*, vol. 33, no. 4, pp. 717–22, 1983.

T. Paus, V. Babenko, and T. Radil, "Development of an ability to maintain verbally instructed central gaze fixation studied in 8- to 10-year-old children," *International journal of psychophysiology : official journal of the International Organization of Psychophysiology*, vol. 10, no. 1, pp. 53–61, 1990.

T. Paus, V. Babenko, and T. Radil, "Development of an ability to maintain verbally instructed central gaze fixation studied in 8-year-old to 10-year-old children," *International Journal of Psychophysiology*, vol. 10, no. 1, pp. 53–61, 1990.

V. Babenko, "A model of an object-form description mechanism," *Perception*, vol. 20, no. 1, p. 70, 1991.

V. V. Babenko, "Spatial extent of masking by sine-wave gratings," *Perception*, vol. 26, p. 23, 1997.

V. V. Babenko, "The visual mechanisms selective for the total extent of a periodic pattern (rus)," *Fiziologiia cheloveka*, vol. 25, no. 2, pp. 30–5, 1999.

G. A. Kuraev and V. V. Babenko, "Dependence of the threshold of sinusoidal grating displacement on its spatial frequency characteristics (rus)," *Fiziologiia cheloveka*, vol. 26, no. 4, pp. 30–7, 2000.

V. V. Babenko, G. A. Kuraev, and S. N. Kul'ba, "Size as a parameter for tuning visual attention (rus)," *Zhurnal vysshei nervnoi deiatelnosti imeni I P Pavlova*, vol. 51, no. 5, pp. 643–5, 2001.

V. V. Babenko, G. A. Kuraev, and S. N. Kulba, "Size as a tuning parameter for visual attention (rus)," *Zhurnal Vysshei Nervnoi Deyatelnosti Imeni I P Pavlova*, vol. 51, no. 5, pp. 643–645, 2001.

V. V. Babenko, G. A. Kuraev, and S. N. Kul'ba, "Problem of visual segmentation and spatial-frequency filtration (rus)," *Rossiiskii fiziologicheskii zhurnal imeni I.M. Sechenova / Rossiiskaia akademiia nauk*, vol. 89, no. 10, pp. 1300–9, 2003.

V. V. Babenko and S. N. Kulba, "Visual search of contrast modulation," *Perception*, vol. 33, pp. 148–148, 2004.

V. V. Babenko, *Segmentation in vision (Rus)*. Rostov-on-Don, 2004.

V. V. Babenko, M. J. Kotova, and Z. M. Safina, "Representation of visual-auditory integration effectiveness in event-related potentials," *Perception*, vol. 34, pp. 217–217, 2005.

M. A. Bozhinskaya and V. V. Babenko, "Visual search of the second order stimuli," *Perception*, vol. 35, pp. 161–161, 2006.

V. Babenko, S. Kulba, and M. Bozhinskaya, "Visual search of modulated textures (rus)," *Sensornye sistemy*, vol. 20, no. 4, pp. 259–264, 2006.

V. Babenko, M. A. Bozhinskaya, and E. R. Safina, "The relation of carrier and envelope during perception of spatial-frequency modulation," *Perception*, vol. 36, pp. 37–37, 2007.

V. V. Babenko, S. N. Kulba, and M. J. Kotova, "Representation of heterosensory integration effectiveness in parameters of event-related potentials (rus)," *Zhurnal Vysshei Nervnoi Deyatelnosti Imeni I P Pavlova*, vol. 57, no. 4, pp. 407–418, 2007.

V. V. Babenko, S. N. Kulba, and M. A. Pavlovskaya, "Temporal summation of amplitude-modulated noise in person's auditory system (rus)," *Psikhologicheskii Zhurnal*, vol. 28, no. 1, pp. 100–106, 2007.

V. V. Babenko and P. N. Ermakov, "Representation of auditory-visual integration effectiveness in parameters of evoked potentials," *International Journal of Psychophysiology*, vol. 69, no. 3, pp. 255–255, 2008.

V. V. Babenko, S. N. Kul'ba, and M. Y. Kotova, "Reflection of the effectiveness of heterosensory integration in measures of event-linked potentials," *Neuroscience and behavioral physiology*, vol. 38, no. 5, pp. 523–32, 2008.

V. Babenko and D. Yavna, "Specificity of the visual second-order mechanisms," *Perception*, vol. 37, pp. 78–79, 2008.

D. V. Yavna, V. V. Babenko, and A. A. Soloviev, "Visual search of the second-order targets with uncertainty," *Perception*, vol. 38, pp. 55–55, 2009.

P. N. Ermakov, V. V. Babenko, and S. N. Koulba, "Representation of visual and auditory unputs relative efciency in parameters of bimodal evoked potentials (rus)," *Rossiyskiy Psikhologicheskiy Zhurnal*, vol. 6, no. 1, pp. 35–45, 2009.

P. N. Ermakov, V. V. Babenko, and M. A. Bozhinskaya, "Dipole sources localization of late components of event-related potentials during effective and ineffective visual search (rus)," *Zhurnal Vysshei Nervnoi Deyatelnosti Imeni I P Pavlova*, vol. 59, no. 4, pp. 411–420, 2009.

D. V. Yavna, V. V. Babenko, and A. A. Soloviev, "A role of hemispheres in the second-order stimuli perception," *Perception*, vol. 39, pp. 194–194, 2010.

V. V. Babenko and D. V. Yavna, "Second-order visual mechanisms are fixed filters," *Perception*, vol. 39, pp. 194–194, 2010.

V. V. Babenko, P. N. Ermakov, and M. A. Bozhinskaya, "Relationship between the spatial-frequency tunings of the first- and the second-order visual filters (rus)," *Psikhologicheskii Zhurnal*, vol. 31, no. 2, pp. 48–57, 2010.

M. Miftakhova, D. Yavna, and V. Babenko, "Tuning of the second-order visual mechanisms to spatial frequency of contrast modulation," *Perception*, vol. 40, pp. 178–179, 2011.

V. V. Babenko, D. V. Yavna, A. A. Solov'ev, and M. B. Miftakhova, "Spatial selectivity of visual mechanisms sensitive to contrast modulation," *Journal of Optical Technology*, vol. 78, no. 12, pp. 771–776, 2011.

P. Ermakov and V. Babenko, "Hemispheric asymmetry of the evoked activity during search of the relevant visual information," *International Journal of Psychology*, vol. 47, pp. 146–146, 2012.

V. Babenko and D. Yavna, "Participation of the hemispheres in detection of 1st-and 2nd-order visual stimuli," *International Journal of Psychology*, vol. 47, pp. 145–145, 2012.

V. Babenko, D. Yavna, and P. Ermakov, "Evidence for the specificity of second-order visual mechanisms by evoked potentials," *International Journal of Psychophysiology*, vol. 85, no. 3, pp. 372–373, 2012.

D. Yavna, V. Babenko, and A. Soloviev, "Cortical localization of second-order visual mechanisms," *Perception*, vol. 41, pp. 249–249, 2012.

V. Babenko and P. Ermakov, "Second-order visual mechanisms and interhemispheric asymmetry," *Perception*, vol. 42, pp. 61–61, 2013.

M. Miftakhova, V. Babenko, and D. Yavna, "Selectivity of second-order visual mechanisms sensitive to the orientation modulations revealed by masking," *Perception*, vol. 42, pp. 115–116, 2013.

V. V. Babenko and P. N. Ermakov, *Vision and binding problem (Rus)*. Moscow: Credo, 2013.

V. V. Babenko and P. N. Ermakov, "Hemispheric asymmetry in the pooling of local visual information," *International Journal of Psychophysiology*, vol. 94, no. 2, pp. 144–144, 2014.

V. Babenko, P. Ermakov, and D. Yavna, "Competition for attention and spatial frequencies," *Perception*, vol. 44, pp. 135–136, 2015.

V. V. Babenko and P. N. Ermakov, "Specificity of brain reactions to second-order visual stimuli," *Visual neuroscience*, vol. 32, pp. E011–E011, 2015.

M. B. Miftakhova, D. V. Yavna, G. P. Zvezdina, P. N. Ermakov, and V. V. Babenko, "Bandwidth of visual filters that transmit the spatial frequency modulation (rus)," *Rossiyskiy Psikhologicheskiy Zhurnal*, vol. 12, no. 2, pp. 99–111, 2015.