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Areas of Specialization:

- Human-computer interaction, immersive 3D virtual reality technologies
- Cognitive style and socio-cultural influences on cognition
- Exceptional human performance and creativity

Academic and Professional Appointments:

- 2011-current Associate Professor, Psychology, *National University of Singapore*, Singapore jointly with Dept. of Radiology, *Harvard Medical School*, and Martinos Center for Biomedical Imaging, MA
- 2006 - 2010 Associate Professor of Human Factor, *George Mason University*, Fairfax, VA.
- 2001 – 2006 Assistant Professor of Psychology, *Rutgers University*, NJ
- 1999 – 2001 Lecturer, Harvard Graduate School of Education, *Harvard University*, Cambridge, MA

Professional Preparation:

- 1999 – 2001 Postdoctoral Researcher, Psychology Department, *Harvard University*, Cambridge, MA
- 1996 – 1999 Ph.D. in Psychology, Department of Psychology, *University of California, Santa Barbara* jointly with the Department of Education, *Technion - Israel Institute of Technology*.
- 1993 – 1996 M.Sc. in Science Education, Department of Education, *Technion - Israel Institute of Technology*.
- 1988 – 1990 M.Sc. in Physics, Department of Theoretical Physics, *Uzhgorod State University*, Ukraine.
- 1984 – 1988 B.Sc. in Physics, Department of Astrophysics and Space Research, *Moscow Institute of Physics and Technology*, Russia.

Synergetic Activities

Administrative Experience:

- 2013 - 2016 Consultant AIRBUS Industry for the research program entitled “Virtual Immersive Reality System for Training in Aerospace Manufacturing (VIRISTAM jointly with AMIC (Aerospace and Manufacturing innovation Centre), Malaysia, Kuala Lumpur
- 2011 - 2013 Chair of Research Committee, Psychology Department, *National University of Singapore*, Singapore
- 2006 - 2009 Program Director, Science of Learning Centers Program, *US National Science Foundation*, Arlington, VA.
- 2001 – 2006 Director of Human-Computer Interaction Program *Rutgers University*, NJ

Grants and Awards:

- 2017 – 2020 *Principal Investigator*, Exploring Creativity – *Ministry of Education (MOE) Academies Funding Projects Fund – Tier 2*, Singapore (SIN\$234,040)
- 2017 – 2020 *Principal Investigator*, Neurocognitive correlated of creativity and creative states - Tier 1

- (FY2016-FRC3-015), *Ministry of Education*, Singapore (SIN\$60,000)
- 2016 – 2017 *Principal Investigator*, Developing innovative profiling assessments: A new taxonomy of cognitive styles- *HSS Seed Fund, National University of Singapore* (SIN\$40,000)
- 2014 – 2016 *Principal Investigator*, Individual differences in learning and training in 3D immersive virtual environments - *US Office of Naval Research* (\$130,000)
- 2014 - 2016 *Principal Investigator*, Exploring creativity dimensions - Tier 1 (FY2013-FRC2-007), *Ministry of Education*, Singapore (SIN\$76,091)
- 2010 - 2014 *Principal Investigator*, Spatial Ability and its Impact on Learning and Training and Learning in Immersive Virtual Environments *US Office of Naval Research* (\$570,000)
- 2012 – 2013 *Principal Investigator*, Prevention of Laparoscopic Surgical Skill Attrition Phase II. PI (subcontract with Antrotronix Medical Inc). *US Office of Naval Research* PI on the subcontract (\$30,000)
- 2009 - 2014 *Principal Investigator*, Neural (EEG) correlates of three-dimensional visual-spatial processing - *FASS, National University of Singapore* (SIN\$830,000)
- 2009 - 2010 *Principal Investigator*, Virtual Reality-based Educational Laboratories in Engineering, *US National Science Foundation* (\$54,000)
- 2008 - 2009 *Principal Investigator*, Neural Correlates of 3D Visual-Spatial Processing *US Office of Naval Research* (\$107,000)
- 2003 - 2008 *Principal Investigator*, Visualization Processes in Learning in 3D Virtual Reality, *Career Award, US National Science Foundation* (\$450,000)
The major goal of this award is to investigate how visual imagery processes interact with learning abstract science concept in 3D immersive virtual reality
- 2004 - 2007 *Principal Investigator*, Individual Differences in Visual Processing: Cognitive Neuroscience Perspective, *US Office of Naval Research* (\$300,000)
- 2004 - 2007 *Principal Investigator*, Cognitive Style and Individual Differences in Imagery II Research on Learning and Education Program, *US National Science Foundation* (\$240,000)
- 2002 - 2005 *Principal Investigator*, Board of Governor Award – The Role of Educational Technology in Teaching and Learning” (\$45,000).
- 2001 - 2004 *Principal Investigator*, Cognitive Style and Individual Differences in Imagery I Research on Learning and Education Program, *US National Science Foundation* (\$370,000)
- 1999 - 2001 *Principal Investigator*, McCoy Technology Award “Developing guidelines for the design of science-related technologies”, *Harvard Graduate School of Education*, \$5,000

Professional Memberships:

- 2002 – Psychonomic Society
 2001 – Society for Neuroscience
 2006 - Human Factor and Ergonomics Society

Patents/Copyrighted Software:

- "Three-Dimensional Perspective Taking Ability Assessment Tool", US Patent Application #2010/0075284 (2010)
- Copyright, *Mental Imagery Cognitive Style Questionnaire*, Rutgers University 2004. This test is a unique assessment of different types of visual imagery abilities, important in a diverse visual field, such as visual arts and sciences;

- Copyright, *Perspective-Taking Test*, Rutgers University, 2005. This test is a unique assessment of spatial navigation ability, which is a unique tool that reliably measures spatial navigation abilities of pilots and astronauts.

Professional Activities:

Workshop/conference Organization, and Panel Activities:

- Organizer, *Workshop on Fostering Dialogue between Tibetan Buddhism and Contemporary Psychology & Neuroscience*. National University of Singapore, March 2021
- Editorial Board. *JURNAL PSIKOLOGI MALAYSIA*, 2015- current
- Conference Session Chair, Psychonomic Society Annual Meeting, Chicago, Illinois, USA, Nov 2015
- Conference Session Chair, the 5th international Conference on Human Factors and Ergonomics, Krakow, Poland, July 2014
- Member of Program Committee, Third Annual International Conference on Cognitive and Behavioral Psychology, Singapore, 24-25 February 2014
- Editorial Board. *Cognition and Instruction*, 2012-2017
- Editorial work (co-Editor) for *Research Papers in Education: Policy and Practice*, Special Issue: *Style and Practice*, 2010 - 2012;
- Reviewer for the National Science Foundation panels, 2003 - 2010;
- Member of Program Committee, International Conference on Spatial Cognition, 2008;
- Member of Program Committee, Third International Conference on Design Computing and Cognition – DCC08;
- Organizer, *International Workshop on Educational Neuroscience* (Chairs – Kurt Fisher, Harvard; Usha Goswami – Cambridge University; John Geake – Oxford Brooks), *National Science Foundation*, Arlington, VA, Dec 2007.
- Chair and Organizer, *Interdisciplinary Workshop on Expertise, Transfer, and Creativity*, *National Science Foundation*, Arlington, VA, Nov 30-Dec 1, 2006;
- Member of Program Committee, *American Educational Research Association Annual Conference*, 2003
- Member of Program Committee, *Diagrams 2002 – Second international conference on theory and application of diagrams*, 2002

Journal Publications:

- Kozhevnikov, M., Ho, S., & Koh, E. (2021). The Role of visual abilities and cognitive style in artistic and scientific creativity of Singaporean secondary school students, *Journal of Creative Behavior* (currently published online) <https://onlinelibrary.wiley.com/doi/abs/10.1002/jocb.522>
- Blazhenkova, O., & Kozhevnikov M, (2020). Creative processes during a collaborative drawing task in teams of different specializations, *Creative Education*. 11 (09), 1751.
- Kozhevnikov, M. (2019). Enhancing Human Cognition Through Vajrayana Practices. *Journal of Religion and Health*, 58(3):737-747
- Kozhevnikov, M., Li, Y., Wong, S., Obana, T., & Amihai, I. (2018). Do enhanced states exist? Boosting cognitive capacities through an action videogame. *Cognition*, 173, 93-105.
- Blazhenkova. O. & Kozhevnikov, M. (2016). Types of creativity and visualization in teams of different educational specialization. *Creativity Research Journal*, 28, 123-135.
- Zhong, J. Y. & Kozhevnikov, M. (2016). Relating allocentric and egocentric survey-based representations to the self-reported use of a navigation strategy of egocentric spatial updating. *Journal of Environmental Psychology*, 46, 154–175.
- Kozhevnikov, M., Cheng L.R., & Kozhevnikov, M. (2015). Effect of environment immersivity on encoding

- strategies of spatial tasks. *Procedia Manufacturing*, 3, 5059-5066.
- Kozhevnikov, M., Evans, C., & Kosslyn, S. M. (2014). Cognitive style as environmentally sensitive individual differences in cognition: A modern synthesis and applications in education, business, and management. *Psychological Science in the Public Interest*, 15, 3-33.
- Eve, E. J., Koo, S., Alshihri, A. A., Cormier, J., Kozhevnikov, M., Donoff, R. B., & Karimbux, N. Y. (2014). Performance of Dental Students versus Prosthodontics Residents on a 3D Immersive Haptic Simulator. *Journal of Dental Education*, 78, 630-637.
- Amihai, I., & Kozhevnikov, M. (2015). The Influence of Buddhist Meditation Traditions on the Autonomic System and Attention. *Biomed Research International*.
- Amihai, I., & Kozhevnikov, M. (2014). Arousal vs. Relaxation: A Comparison of the Neurophysiological and Cognitive Correlates of Vajrayana and Theravada Meditative Practices. *PLoS ONE*, 9, e102990.
- Kozhevnikov, M., Schloerb, D. W., Blazhenkova, O., Koo, S., Karimbux, N., Donoff, R., & Salcedo, J. (2013). Egocentric versus allocentric spatial ability in dentistry and haptic virtual reality training. *Applied Cognitive Psychology*, 27, 373-383.
- Kozhevnikov, M., Kozhevnikov, M., Yu, C. J., & Blazhenkova, O. (2013). Creativity, visualization abilities, and visual cognitive style. *British Journal of Educational Psychology*, 83, 196-209.
- Kozhevnikov, M., Gurlitt, J., & Kozhevnikov, M. (2013). Learning relative motion concepts in immersive and non-immersive virtual environments. *Journal of Science Education and Technology*, 22, 952-962.
- Kozhevnikov, M., Elliott, J., Shephard, J., & Gramann, K. (2013). Neurocognitive and Somatic Components of Temperature Increases during g-Tummo Meditation: Legend and Reality. *PLOS One*, 8, e58244.
- Kozhevnikov, M. & Dhond, R. P. (2012). Understanding immersivity: Image generation and transformation processes in 3D immersive environments. *Frontiers in Psychology*, 3, Article 284.
- Evans, C., & Kozhevnikov, M. (2011). Styles of practice: how learning is affected by students' and teachers' perceptions and beliefs, conceptions, and approaches to learning. *Research Papers in Education*, 2, 133-148.
- Blazhenkova, O., Becker, M. & Kozhevnikov, M., (2011). Object-spatial imagery and verbal cognitive styles in children and adolescences. *Learning and Individual Differences*, 21, 281-287.
- Blazhenkova, O. & Kozhevnikov, M. (2010). Visual-object ability: A new dimension of non-verbal intelligence. *Cognition*, 117, 276-301.
- Kozhevnikov, M., Blazhenkova, O., & Becker, M. (2010). Trade-off in object versus spatial visualization abilities: Restriction in the development of visual processing resources. *Psychonomic Bulletin & Review*, 17, 29-35.
- Kozhevnikov, M., Louchakova, O., Josipovich, Z., & Motes, M. (2009). The enhancement of visual-spatial processing efficiency through Buddhist Deity. *Psychological Science*, 20, 645 – 653.
- Blazhenkova O. & Kozhevnikov M. (2009). The new object-spatial-verbal cognitive style model: Theory and measurement. *Applied Cognitive Psychology*, 23, 638-663.
- Motes, M. A., Malach, R., & Kozhevnikov, M. (2008). Object-processing neural efficiency differentiates object from spatial visualizers. *NeuroReport*, 19, 1727-1731.
- Kozhevnikov, M. (2007). Cognitive styles in the context of modern psychology: Toward an integrated framework. *Psychological Bulletin*, 133, 464-481.
- Kozhevnikov, M., Motes, M., and Hegarty, M. (2007). Spatial visualization in physics problem solving. *Cognitive Sciences*, 31, 549-579.
- Finlay, C., Motes, M., & Kozhevnikov, M. (2007). Updating representations of learned scenes. *Psychological Research*, 71(3), 265-276.
- Kozhevnikov, M. & Thornton, R. (2006). Real-time data display, spatial visualization ability, and learning force and motion concepts. *Journal of Science Education and Technology*, 15, 113-134.
- Motes, M., Finlay, C. & Kozhevnikov, M. (2006). Scene recognition following locomotion around a scene. *Perception*, 35, 1507-1520.

- Kozhevnikov, M., Motes, M., Rasch, B. & Blajenkova, O. (2006). Perspective-taking vs. mental rotation transformations and how they predict spatial navigation performance. *Applied Cognitive Psychology*, 20, 397–417.
- Blajenkova, O., Kozhevnikov, M. & Motes, M. (2006). Object-Spatial Imagery: A New Self-Report Imagery Questionnaire. *Applied Cognitive Psychology*, 20, 239–263.
- Kozhevnikov, M., Kosslyn, S., & Shephard, J. (2005). Spatial versus object visualizers: A new characterization of visual cognitive style. *Memory and Cognition*, 33, 710-726.
- Blajenkova, O., Motes, M. & Kozhevnikov, M. (2005). Individual differences in the representations of novel environments. *Journal of Environmental Psychology*, 25, 97-109.
- Kozhevnikov, M., Hegarty, M. & Mayer, R. (2002). Revising the visualizer-verbalizer dimension: Evidence for two types of visualizers, *Cognition & Instruction*, 20, 37-77.
- Kozhevnikov, M. & Hegarty, M. (2001). Impetus beliefs as default heuristics: Dissociation between explicit and implicit knowledge about motion. *Psychonomic Bulletin & Review*, 8, 439-453.
- Kozhevnikov, M. & Hegarty, M. (2001). A dissociation between object manipulation spatial ability and spatial orientation ability, *Memory & Cognition*, 29, 745-756.
- Hegarty, M. & Kozhevnikov, M. (1999). Types of visual-spatial representations and mathematical problem solving. *Journal of Educational Psychology*, 91, 684-689.
- Eckstein, S. & Kozhevnikov, M. (1997). Parallelism in the development of historical theories and children's ideas about projectile motion. *International Journal of Science Education*, 19, 1057-1073.

Edited Books:

Evans, Carol & Kozhevnikov, Maria (Eds.) (2013), *Styles of Practice in Higher Education: Exploring Approaches to Teaching and Learning*, London & New York: Routledge.

Book Chapters:

- Kozhevnikov, M., & Blazhenkova O. (2013). Individual differences in object versus spatial imagery: From neural correlates to real-world applications. In S. Lacey & R. Lawson (Eds.), *Multisensory imagery* (pp. 299-318). New York, NY: Springer Science + Business Media.
- Kozhevnikov, M. (2013). Cognitive style. In D. Reisberg (Ed.), *The Oxford handbook of cognitive psychology* (pp. 842-855). New York, NY: Oxford University Press.
- Blazhenkova, O., and Kozhevnikov, M. (2012). Intellectual styles in members of different professions. In L.-f. Zhang, R. Sternberg and S. Rayner (Eds.), *Handbook of intellectual styles: Preferences in cognition, learning, and thinking* (pp. 353-372). New York, NY: Springer.
- Kozhevnikov, M., & Garcia, A. (2011). Visual-spatial learning and training in collaborative design in virtual environments. In X. Wang & J. Jen-Hung (Eds.), *Collaborative design in virtual environments* (pp. 17-26). New York, NY: Springer.
- Moskvina, V. & Kozhevnikov, M. (2010). Determining Cognitive Styles: Historical Perspectives and Directions for Further Research. In S. Rayner & E. Cools (Eds.), *Style Differences in Cognition, Learning, and Management. Theory, Research, and Practice* (pp. 19-31). New York, NY: Routledge.
- Kozhevnikov, M., Royan, J., Blazhenkova O., & Gorbunov, A. (2008). The Role of Immersivity in Three-Dimensional Mental Rotation. In J. S. Gero & A. K. Goel (Eds.), *Design Computing and Cognition '08* (pp. 143-157). Springer.
- Kozhevnikov, M., Hegarty, M. & Mayer, R. (2002). Visual/spatial abilities in problem solving in physics. In M. Anderson, B. Meyer & P. Olivier (Eds). *Diagrammatic Representation and Reasoning* (pp. 155-173), Springer-Verlag.
- Kozhevnikov, M. & Hegarty, M. (1999). Representational momentum or representational impetus. In J. Gero & B. Tversky (Eds.), *Visual and Spatial Reasoning in Design* (pp. 263-269). Sydney, Australia: Key Centre of Design Computing and Cognition.

Hegarty, M. & Kozhevnikov, M. (1999). Spatial abilities, working memory and mechanical reasoning. In J. Gero & B. Tversky (Eds.), *Visual and Spatial Reasoning in Design* (pp. 221-241). Sydney, Australia: Key Centre of Design Computing and Cognition.