

Yana Fandakova, Ph.D.

Max Planck Institute for Human Development
Center for Lifespan Psychology
Lentzeallee 94
14195 Berlin, Germany
+49-30-82406-671

fandakova@mpib-berlin.mpg.de

Academic Positions

- | | |
|----------------|---|
| 2016 – present | Max Planck Institute for Human Development, Berlin
Principal Investigator
<i>Mechanisms and Sequential Progression of Plasticity in Childhood</i> ,
Center for Lifespan Psychology |
| 2014 – 2016 | University of California, Berkeley & Davis
Postdoctoral Fellow
<i>Building Blocks of Cognition Lab</i> , Helen Wills Neuroscience Institute,
UC Berkeley
<i>Memory and Development Lab</i> , Center for Mind and Brain, UC Davis |
| 2012 – 2013 | Max Planck Institute for Human Development, Berlin
Postdoctoral Fellow
Center for Lifespan Psychology |

Education

- | | |
|------|--|
| 2012 | Humboldt University Berlin
Ph.D. (Dr. rer. nat.), <i>Summa cum Laude</i>
Dissertation title: <i>Age and Individual Differences in True and False Memory Across the Lifespan</i> |
| 2008 | Humboldt University Berlin
M.A. in Psychology (Dipl.-Psych.)
Major: Cognitive Psychology and Neuroscience |

Grants and Awards

- | | |
|-------------|---|
| 2019 – 2021 | <i>How do students learn new concepts? Identifying factors that promote students' understanding of physical science concepts</i>
Jacobs Foundation
Role: PI
Total Award: CHF 195 889, MPI subaward: CHF 67 996 |
| 2018 – 2021 | <i>Plasticity of Task Switching in Childhood: Mechanisms and Sequential Progression</i>
German Research Foundation (DFG), DFG Priority Program SPP 1772 "Multitasking"
Role: PI
Total Award: EUR 275 720 |

- 2015 Fellowship
Latin American School for Education, Cognitive and Neural Sciences,
San Pedro de Atacama, Chile
James S. McDonnell Foundation
- 2014 – 2016 Research Fellowship
Relating changes in fronto-parietal networks to changes in control over memory: A longitudinal, cognitive neuroscience approach to memory development in childhood
German Research Foundation (DFG)
- 2013 Otto Hahn Medal for outstanding scientific achievements
Max Planck Society
- 2012 Fellowship
Summer Institute in Cognitive Neuroscience, University of California,
Santa Barbara
National Institute of Mental Health
- 2011 & 2012 Travel Grants
Society for Research in Child Development Meeting, Montreal,
Canada & Society for Neuroscience Meeting, New Orleans, USA
German Academic Exchange Service (DAAD)
- 2009 – 2011 Predoctoral Fellow
International Max Planck Research School "The Life Course:
Evolutionary and Ontogenetic Dynamics (LIFE)"

Publications

Peer-Reviewed Journals & Book Chapters

Sommer, V. R., **Fandakova, Y.**, Grandy, T. H., Shing, Y. L., Werkle-Bergner, M., & Sander, M. C. (2019). Neural pattern similarity differentially affects memory performance of younger and older adults. *The Journal of Neuroscience*, 39, 8089-8099.

Fandakova, Y., Leckey, S., Driver, C. C., Bunge, S. A., & Ghetti, S. (2019). Neural specificity of scene representations is related to memory performance in childhood. *NeuroImage*. 199, 105-113.

Muehlroth, B. E., Sander, M. C., **Fandakova, Y.**, Grandy, T. H., Rasch, B., Shing, Y. L., & Werkle-Bergner, M. (2019). Precise slow oscillation-spindle coupling promotes memory consolidation in younger and older adults. *Scientific Reports*, 9:1940.

Selmeczy, D., **Fandakova, Y.**, Grimm, K. J., Bunge, S. A., & Ghetti, S. (2019). Longitudinal Trajectories of Hippocampal and Prefrontal Contributions to Episodic Retrieval: Effects of Age and Puberty. *Developmental Cognitive Neuroscience*, 36:100599.

Fandakova, Y., Sander, M. C., Grandy, T. H., Cabeza, R., Werkle-Bergner, M., & Shing, Y. L. (2018). Age differences in false memory: The importance of retrieval monitoring processes and their modulation by memory quality. *Psychology and Aging*, 33, 119-133.

Fandakova, Y., Bunge, S. A., Wendelken, C., Desautels, P., Hunter, L., Lee J. K., & Ghetti, S. (2018). The importance of knowing when you don't remember: Neural signaling of retrieval failure predicts memory improvement over time. *Cerebral Cortex*, 28, 90–102.

Fandakova, Y. & Ghetti, S. (2017). Memory. In B. Hopkins, E. Geangu, & S. Linkenauer (Eds.), *The Cambridge Encyclopedia of Child Development* (pp. 322 – 330). Cambridge, UK: Cambridge University Press.

Fandakova, Y., Selmeczy, D., Leckey, S., Grimm, K. J., Wendelken, C., Bunge, S. A., Ghetti, S. (2017). Changes in ventromedial prefrontal and insular cortex support the development of metamemory from childhood into adolescence. *Proceedings of the National Academy of Sciences of the United States of America*, 114, 7582-7587.

Fandakova, Y., & Bunge, S. A. (2016). What connections can we draw between research on long-term memory and student learning? *Mind, Brain, and Education*, 10, 135-142.

Fandakova, Y., Lindenberger, U., & Shing, Y. L. (2015). Maintenance of youth-like processing protects against false memory in later adulthood. *Neurobiology of Aging*, 36, 933–941.

Fandakova, Y., Lindenberger, U., & Shing, Y. L. (2015). Episodic memory across the lifespan: General trajectories and modifiers. In D. R. Addis, M. D. Barense, & A. Duarte (Eds.) *The Wiley handbook on the cognitive neuroscience of memory* (pp. 309–325). Hoboken, NJ: Wiley-Blackwell Press.

Fandakova, Y., Lindenberger, U., & Shing, Y. L. (2014). Deficits in process-specific prefrontal and hippocampal activations contribute to adult age differences in episodic memory interference. *Cerebral Cortex*, 24, 1832–1844.

Fandakova, Y.*, Sander, M. C.*, Werkle-Bergner, M., & Shing, Y. L. (2014). Age differences in short-term memory binding are related to working memory performance across the lifespan. *Psychology and Aging*, 29, 140–149.

*joint first authorship.

Fandakova, Y., Shing, Y. L., & Lindenberger, U. (2013a). Differences in binding and monitoring mechanisms contribute to lifespan age differences in false memory. *Developmental Psychology*, 49, 1822–1832.

Fandakova, Y., Shing, Y. L., & Lindenberger, U. (2013b). High-confidence memory errors in old age: The roles of monitoring and binding processes. *Memory*, 21, 732–750.

Fandakova, Y., Shing, Y. L., & Lindenberger, U. (2012). Heterogeneity in memory training improvement among older adults: A latent class analysis. *Memory*, 20, 554–567.

Shing, Y. L., Rodrigue, K. M., Kennedy, K. M., **Fandakova, Y.**, Bodammer, N., Werkle-Bergner, M., Lindenberger, U., & Raz, N. (2011). Hippocampal subfield volumes: Age, vascular risk, and correlation with associative memory. *Frontiers in Aging Neuroscience*, 3, 2.

Burgmans, S., Gronenschild, E. H. B. M., **Fandakova, Y.**, Shing, Y. L., van Boxtel, M. P. J., Vuurman, E. F. P. M., Uylings, H. B. M., Jolles, J., & Raz, N. (2011). Age differences in speed of processing are partially mediated by differences in axonal integrity. *NeuroImage*, 55(3), 1287–1297.

Preprints

Fandakova, Y., & Gruber, M. J. (2019). Curiosity and surprise enhance memory differently in adolescents than in children. *PsyArXiv*. doi:10.31234/osf.io/s36e5

Fandakova, Y., Werkle-Bergner, M. & Sander, M. C. (2019). (Only) time can tell: Age differences in false memory are magnified at longer delays. *PsyArXiv*. doi.org/10.31234/osf.io/eh5x7

Laube, C., van den Bos, W., & **Fandakova, Y.** (2019). The relationship between pubertal hormones and experience-dependent plasticity: Implications for cognitive training in adolescence. *PsyArXiv*. doi.org/10.31234/osf.io/qrbcn

Lee, J. K., **Fandakova, Y.**, Johnson, E. G., Cohen, N., Bunge, S. A., & Ghetti, S. (2019). Changes in anterior and posterior hippocampus differentially predict item-space, item-time, and item-item memory improvement. *BioRxiv*, 551705. doi.org/10.1101/551705

Muehlroth, B., Sander, M. C., **Fandakova, Y.**, Grandy, T. H., Rasch, B., Shing, Y. L., & Werkle-Bergner, M. (2019). Memory quality modulates the effect of aging on memory consolidation during sleep: Reduced maintenance but intact gain. *BioRxiv*, 547448. doi:10.1101/547448

Sander, M. C., **Fandakova, Y.**, Grandy, T. H., Shing, Y. L., & Werkle-Bergner, M. (2019). Oscillatory mechanisms of successful memory formation in younger and older adults are related to structural integrity. *BioRxiv*, 530121. doi:10.1101/530121

Conference & Invited Talks

- 2019 Invited Talk, Memory development across the lifespan, *Cognitive neuroscience of memory: The Recollection, familiarity and novelty detection conference*, University of Liège, Belgium
- Symposium Talk, States of Curiosity Modulate Learning in Childhood and Adolescence, *Biennial Meeting of the Society for Research in Child Development*, Baltimore, MD, USA
- Invited Talk, Cognitive control contributions to learning and memory: Lifespan development and neural plasticity, *Cardiff University Brain Imaging Center (CUBRIC)*, Cardiff University, UK
- 2018 Commencement Speech, International Graduate Program Medical Neurosciences, *Charité University Hospital, Berlin, Germany*
- Symposium Talk, Adult Age Differences in Decisions About the Accuracy of Retrieval from Episodic Memory, *German Congress of Psychology (DGPS)*, Frankfurt am Main, Germany
- Invited Talk, Cognitive control contributions to learning and memory development in childhood and adolescence, *Annual Flux Congress*, Berlin, Germany
- Symposium Talk, States of Curiosity Modulate Learning in Childhood and Adolescence, *APA Convention*, San Francisco, CA, USA

Invited Talk, Age differences in false memory are magnified at longer delays, *Cognitive Aging Conference, Atlanta, GA, USA*

Invited Talk, Cognitive control processes for learning and memory across the lifespan, *Department of Psychology, Lund University, Sweden*

2017 Symposium Talk, Age differences in precision and reinstatement of neural representations: Contributions to memory development. *Biennial Meeting of the Society for Research in Child Development, Austin, TX, USA*

2016 Symposium Talk, Medial prefrontal contributions to the development of metamnemonic monitoring and control. *International Conference on Memory, Budapest, Hungary*

2015 Invited Talk, Development of memory regulation across the lifespan, *Department of Psychology, University of Pittsburgh, PA, USA*

Symposium Talk, Neurodevelopment of source memory during middle childhood: Cross-sectional and longitudinal evidence. *Biennial Meeting of the Society for Research in Child Development, Philadelphia, PA, USA*

2014 Symposium Talk, Memory representation strength modulates the neural networks supporting associative recognition and novelty detection. *Annual Society for Neuroscience Meeting, Washington DC, USA*

Invited Talk, The Importance of Knowing What You Don't Know: Exploring the Neural Basis of Individual Differences in Monitoring of Episodic Memory. *Annual Flux Congress, Los Angeles, CA, USA*

2013 Symposium Talk, Heterogeneity in episodic memory control processes among older adults: Structural and functional findings. *Tagung experimentell arbeitender Psychologen (TeaP), Vienna, Austria*

2012 Symposium Talk, Age differences in memory monitoring and associative novelty detection contribute to older adults' increased susceptibility to false memory. *German Congress of Psychology (DGPS), Bielefeld, Germany*

2011 Symposium Talk, Adult age differences in monitoring highly familiar events, *Biennial Meeting of the Society for Research in Child Development, Montreal, Canada*

Organization of Conference Symposia

2017 Neurocognitive Development during Adolescence: Tipping the Balance towards Cognitive Control
Biennial Meeting of the Society for Research on Child Development, Austin, TX, USA
Speakers: Wouter van den Bos, Beatriz Luna, Lucia Magis-Weinberg, Yana Fandakova (co-chaired with Simona Ghetti)

- 2016 Interactions between memory representation and control: Mechanisms and age-related differences
International Conference on Memory, Budapest, Hungary
Speakers: Roberto Cabeza, Richard Henson, Yana Fandakova, Audrey Duarte, Alexa M. Morcom, Zara Bergström, Roland Benoit (co-chaired with Yee Lee Shing)
- 2012 Age Differences in Memory Control Processes
German Congress of Psychology (DGPS), Bielefeld, Germany
Speakers: Myriam C. Sander, Kerstin Jost, Alp Aslan, Kora Titz, Yana Fandakova (co-chaired with Myriam C. Sander)

Conference Posters (selected)

Fandakova, Y., Johnson, E., & Ghetti, S. (2017). Interactions between parietal and striatal systems contribute to subjective recollection and decision-making. *Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA, USA.*

Fandakova, Y., Johnson, E., & Ghetti, S. (2015). The neural underpinnings of memory monitoring and control: Evidence from a metacognitive illusion. *Meeting of the Cognitive Development Society, Columbus, OH, USA.*

Fandakova, Y., Wendelken, C., Lee J. K., Bunge, S. A., Ghetti, S. (2015). Individual differences in the neural basis of metacognitive monitoring predict change in memory accuracy over time. *Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA, USA.*

Fandakova, Y., Lindenberger, U., Shing, Y. L. (2013). Individual Differences in Functional Activation are Related to Episodic Memory Errors in Old Age. *Dallas Aging and Cognition Conference, Dallas, TX, USA.*

Fandakova, Y., Lindenberger, U., Shing, Y.L. (2012). False memory in old age: The importance of maintaining functional similarity to younger adults. *Annual Society for Neuroscience Meeting, New Orleans, LA, USA.*

Fandakova, Y., Shing, Y. L., Lindenberger, U. (2011). Adult age differences in the ability to withstand interference in episodic memory: Neuronal correlates and interaction with binding mechanisms. *Annual Cognitive Neuroscience Society Meeting, San Francisco, CA, USA.*

Fandakova, Y., Shing, Y. L., Lindenberger, U. (2010). Age-related differences in the ability to monitor currently relevant memories. *Cognitive Aging Conference, Atlanta, GA, USA.*

Public Outreach

Xenius documentary "Digital Stress", ARTE
<https://www.arte.tv/de/videos/078163-006-A/xenius/>

Radio documentary „Neuroplasticity“, Bayerischer Rundfunk
<https://www.br.de/mediathek/podcast/radiowissen/488>

Interview on the 60th Birthday of the Memory game, Saarländischer Rundfunk
https://www.sr.de/sr/sr2/themen/kultur/20190415_memory_mit_zwillingen_selbstversuch102.html

Regular lectures on learning, memory and brain development in local high schools

Ad-hoc Reviews

Acta Psychologica; Aging, Neuropsychology and Cognition; Child Development; Cerebral Cortex; Cognition; Cognitive Development; Developmental Psychology; Developmental Science; Experimental Brain Research; Frontiers in Psychology; Journal of Experimental Psychology: General; Journal of Gerontology: Psychological Sciences; Journal of Neuroscience; Journal of Memory and Language; Hippocampus; Memory & Cognition; Neurobiology of Aging; Neuron; Neuropsychologia; PLoS One; Psychology and Aging; Quarterly Journal of Experimental Psychology; Royal Society Open Science; Scientific Reports

Editorial Service

- | | |
|----------------|---|
| 2018 – present | Guest Editor, Special issue of <i>Developmental Cognitive Neuroscience: Mechanisms of Learning and Plasticity</i> |
| 2018 – present | Editorial Advisory Board, <i>Mind, Brain, and Education</i> |
| 2015 – 2016 | Co-Editor, Special issue of <i>Mind, Brain, and Education: The relevance of memory research for education</i> |

Professional Membership

Cognitive Neuroscience Society, Deutsche Gesellschaft für Psychologie
FLUX Society, Society for Neuroscience, Society for Research in Child Development

Student Supervision

Graduate Students

- | | |
|----------------|--|
| 2016 – present | Neda Khosravani |
| 2018 | Linda Lönnqvist, visiting student, University of Helsinki, Finland |

Postdocs

- | | |
|----------------|---------------|
| 2018 – present | Corinna Laube |
|----------------|---------------|

Bachelor & Master Students

- | | |
|-----------------------|---|
| Kristia Pamungkas | Free University Berlin, bachelor thesis (2019) |
| Carolyn Murray | University of California, Davis, honors thesis (2016) |
| Maike Hille | Free University Berlin, master thesis (2018-2019) |
| Lana Riccius | Potsdam University, master thesis (2017-2018) |
| Roberto Abreu-Mendoza | University of Guadalajara, visiting master student (2018) |

Teaching

- | | |
|--------------------|---|
| Spring 2018 & 2019 | Lecturer
<i>Cognitive and Brain Aging</i>
Department of Psychology, Goethe University, Frankfurt am Main, Germany |
| Fall 2017 & 2018 | Guest Lecturer
<i>Lifespan Psychology</i>
Department of Psychology, Humboldt University Berlin |

Fall 2017	Lecturer <i>Human Research on Learning and Memory</i> , International Graduate Program Medical Neurosciences, Charité University Hospital, Berlin
Spring 2016 & Fall 2014	Guest Lecturer <i>The Developing Brain</i> , Department of Psychology, University of California, Berkeley
Summer 2015	Guest Lecturer <i>Introduction to Human Learning and Memory</i> , Department of Psychology, University of California, Berkeley
Fall 2012 & 2013	Lecturer <i>Human Research on Learning and Memory</i> , International Graduate Program Medical Neurosciences, Charité University Hospital, Berlin
Fall 2012	Lecturer <i>Cognitive Neuroscience of Episodic Memory Across the Lifespan</i> , Department of Psychology, Free University Berlin

Updated: October 2019