

## Curriculum Vitae

### Dr. Yana Fandakova

Max Planck Institute for Human Development  
Center for Lifespan Psychology  
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[www.learningbrain.xyz](http://www.learningbrain.xyz)

### Academic Positions

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- 2016 – present      **Max Planck Institute for Human Development, Berlin (MPIB)**  
Research Scientist  
Co-Principal Investigator, *Mechanisms and Sequential Progression of Plasticity*, Center for Lifespan Psychology
- 2014 – 2016        **University of California, Berkeley & Davis**  
Postdoctoral Fellow  
Helen Wills Neuroscience Institute, UC Berkeley  
Center for Mind and Brain, UC Davis
- 2012 – 2013        **Max Planck Institute for Human Development, Berlin**  
Postdoctoral Fellow  
Center for Lifespan Psychology

### Education

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- 2012                **Humboldt-Universität zu Berlin**  
Dr. rer. nat., *Summa cum Laude*  
Dissertation title: *Age and Individual Differences in True and False Memory Across the Lifespan*
- 2008                **Humboldt-Universität zu Berlin**  
Dipl.-Psych., Major: Cognitive Psychology and Neuroscience

### Grants and Awards

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

- 2014 – 2016 *Relating changes in fronto-parietal networks to changes in control over memory: A longitudinal, cognitive neuroscience approach to memory development in childhood*  
Research Fellowship, German Research Foundation (DFG)  
Role: Postdoctoral Fellow  
Total Award: EUR 87 000
- 2015 Fellowship  
Latin American School for Education, Cognitive and Neural Sciences,  
San Pedro de Atacama, Chile  
James S. McDonnell Foundation
- 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 (NIMH)
- 2011 & 2012 Travel Grants  
German Academic Exchange Service (DAAD)
- 2009 – 2011 Predoctoral Fellow  
International Max Planck Research School "The Life Course:  
Evolutionary and Ontogenetic Dynamics (LIFE)"

## Publications

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### Edited Special Issue

Fandakova, Y., Hartley, C. A., Bunge, S. A., Crone, E., & Lindenberger, U. (Eds.). (2020). Special Issue on Flux 2018: Mechanisms of learning and plasticity. *Developmental Cognitive Neuroscience*, 42.

### Peer-Reviewed Journal Articles & Book Chapters

2021

Wenger, E., Fandakova, Y., & Shing, Y. L. (2021). Episodic memory training. In T. Strobach & J. Karbach (Eds.), *Cognitive training: An overview of features and applications* (pp. 169–184). Springer. [https://doi.org/10.1007/978-3-030-39292-5\\_12](https://doi.org/10.1007/978-3-030-39292-5_12)

2020

Fandakova, Y., & Gruber, M. J. (2020). Curiosity and surprise enhance memory differently in adolescents and in children. *Developmental Science*. Advance online publication. <https://doi.org/10.1111/desc.13005>

Fandakova, Y., & Hartley, C. A. (2020). Mechanisms of learning and plasticity in childhood and adolescence. *Developmental Cognitive Neuroscience*, 42, Article 100764. <https://doi.org/10.1016/j.dcn.2020.100764>

- Fandakova, Y., Werkle-Bergner, M., & Sander, M. C. (2020).** (Only) time can tell: Age differences in false memory are magnified at longer delay. *Psychology and Aging, 35*(4), 473–483. <https://www.doi.org/10.1037/pag0000465>
- Ghetti, S. & **Fandakova, Y. (2020).** Neural development of memory and metamemory: Towards an integrative model of the development of episodic recollection. *Annual Review of Developmental Psychology*. Advance online publication. <https://doi.org/10.1146/annurev-devpsych-060320-085634>
- Kailaheimo-Lönnqvist, L., Virtala, P., **Fandakova, Y.**, Partanen, E., Leppänen, P. H. T., Thiede, A., & Kujala, T. (2020). Infant event-related potentials to speech are associated with prelinguistic development. *Developmental Cognitive Neuroscience, 45*, Article 100831. <https://doi.org/10.1016/j.dcn.2020.100831>
- Laube, C., van den Bos, W., & **Fandakova, Y. (2020).** The relationship between pubertal hormones and brain plasticity: Implications for cognitive training in adolescence. *Developmental Cognitive Neuroscience, 42*, Article 100753. <https://doi.org/10.1016/j.dcn.2020.100753>
- Lee, J. K., **Fandakova, Y.**, Johnson, E. G., Cohen, N. J., Bunge, S. A., & Ghetti, S. (2020). Changes in anterior and posterior hippocampus differentially predict item-space, item-time, and item-item memory improvement. *Developmental Cognitive Neuroscience, 41*, Article 100741. <https://doi.org/10.1016/j.dcn.2019.100741>
- Muehlroth, B. E., Sander, M. C., **Fandakova, Y.**, Grandy, T. H., Rasch, B., Shing, Y. L., & Werkle-Bergner, M. (2020). Memory quality modulates the effect of aging on memory consolidation during sleep: Reduced maintenance but intact gain. *NeuroImage, 209*, Article 116490. <https://doi.org/10.1016/j.neuroimage.2019.116490>
- Sander, M. C., **Fandakova, Y.**, Grandy, T. H., Shing, Y. L., & Werkle-Bergner, M. (2020). Oscillatory mechanisms of successful memory formation in younger and older adults are related to structural integrity. *Cerebral Cortex, 30*(6), 3744–3758. <https://doi.org/10.1093/cercor/bhz339>  
2019
- 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. <https://doi.org/10.1016/j.neuroimage.2019.05.050>
- 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*, Article 1940. <https://doi.org/10.1038/s41598-018-36557-z>
- Selmečzy, 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*, Article 100599. <https://doi.org/10.1016/j.dcn.2018.10.003>

Sommer, V. R., Fandakova, Y., Grandy, T. H., Shing, Y. L., Werkle-Bergner, M., & Sander, M. C. (2019). Neural pattern similarity differentially relates to memory performance in younger and older adults. *The Journal of Neuroscience*, *39*(41), 8089–8099. <https://doi.org/10.1523/JNEUROSCI.0197-19.2019>

2018

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*(1), 90–102. <https://doi.org/10.1093/cercor/bhw352>

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*(1), 119–133. <https://doi.org/10.1037/pag0000212>

2017

Fandakova, Y. & Ghetti, S. (2017). Memory. In B. Hopkins, E. Geangu, & S. Linkenauer (Eds.), *The Cambridge encyclopedia of child development* (pp. 322–330). Cambridge University Press.

Fandakova, Y., Selmečzy, 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*(29), 7582–7587. <https://doi.org/10.1037/pag0000212>

2016

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*(3), 135–142. <https://doi.org/10.1111/mbe.12123>

2015

Fandakova, Y., Lindenberger, U., & Shing, Y. L. (2015). Maintenance of youth-like processing protects against false memory in later adulthood. *Neurobiology of Aging*, *36*(2), 933–941. <https://doi.org/10.1016/j.neurobiolaging.2014.10.022>

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). Wiley-Blackwell Press.

2014

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*(7), 1832–1844. <https://doi.org/10.1093/cercor/bht034>

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. <https://doi.org/10.1037/a0035347>

\*joint first authorship.

2013

Fandakova, Y., Shing, Y. L., & Lindenberger, U. (2013). Differences in binding and monitoring mechanisms contribute to lifespan age differences in false memory. *Developmental Psychology*, 49(10), 1822–1832. <https://doi.org/10.1037/a0031361>

Fandakova, Y., Shing, Y. L., & Lindenberger, U. (2013). High-confidence memory errors in old age: The roles of monitoring and binding processes. *Memory*, 21(6), 732–750. <https://doi.org/10.1080/09658211.2012.756038>

2012

Fandakova, Y., Shing, Y. L., & Lindenberger, U. (2012). Heterogeneity in memory training improvement among older adults: A latent class analysis. *Memory*, 20(6), 554–567. <https://doi.org/10.1080/09658211.2012.687051>

2011

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. <https://doi.org/10.1016/j.neuroimage.2011.01.002>

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, Article 2. <https://doi.org/10.3389/fnagi.2011.00002>

### Manuscripts in Progress

Abreu-Mendoza, R., Zarabozo-Hurtado, D., Chamorro, Y., Vasquez, P., Matute, E., & Fandakova, Y. (2020). The neural correlates of the core number systems contribute to mathematical achievement in adolescence. Ms. under review. Preprint: <https://psyarxiv.com/96tuy/>

### Conference & Invited Talks

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- 2020      Invited Talk: Memory and cognitive control development. *Faculty of Psychology and Educational Sciences, Université Libre de Bruxelles, Belgium* (postponed to 2021)
- Invited Talk: Memory and metamemory development in childhood. *Changes in beliefs: how do humans revise their thoughts? (E-Workshop), Paris Institute for Advanced Study, France*
- 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 for International Graduate Program Medical Neurosciences. *Charité – Universitätsmedizin, 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. *American Psychological Association Annual 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

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- 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)

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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.*

### Public Outreach

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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](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

Science mentor, *Frontiers for Young Minds*

Gawronska, S. M., Poppa, C., Schwarze, S. A., & Fandakova, Y. (in press). The more, the merrier? What happens in your brain when you try to perform multiple tasks simultaneously. *Frontiers for Young Minds.*

### Ad-hoc Reviews

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*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; Nature Communications; Neurobiology of Aging; Neuron; Neuropsychologia; PLoS One; Psychology and Aging; Quarterly Journal of Experimental Psychology; Royal Society Open Science; Scientific Reports*

### Editorial Service

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2018 – present

Editorial Advisory Board, *Mind, Brain, and Education*

- 2018 – 2019      Guest Editor, Special issue of *Developmental Cognitive Neuroscience: Mechanisms of Learning and Plasticity*
- 2015 – 2016      Co-Editor, Special issue of *Mind, Brain, and Education: The relevance of memory research for education*

### Professional Membership

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

### Student Supervision

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#### Postdocs

- 2020 – present      Lieke de Boer  
 2018 – 2020      Corinna Laube

#### Graduate Students

- Starting 2021      Sina Schwarze  
 2016 – present      Neda Khosravani  
 2018      Linda Lönnqvist, visiting student, University of Helsinki, Finland

#### Bachelor & Master Students

- Sina Schwarze      Freie Universität Berlin, Master thesis (2020)  
 Kristia Pamungkas      Freie Universität Berlin, Bachelor thesis (2019)  
 Maike Hille      Freie Universität Berlin, Master thesis (2018-2019)  
 Roberto Abreu-Mendoza      University of Guadalajara, visiting Master student (2018)  
 Lana Riccius      Universität Potsdam, Master thesis (2017-2018)  
 Carolyn Murray      University of California, Davis, Honors thesis (2016)

### Teaching

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- Spring 2018 & 2019      Lecturer  
*Cognitive and Brain Aging*  
 Department of Psychology, Goethe-Universität, Frankfurt am Main  
 (average student global evaluation 5.2 out of 6)
- Fall 2017 & 2018      Guest Lecturer  
*Lifespan Psychology*  
 Department of Psychology, Humboldt Universität zu Berlin
- Fall 2017      Lecturer  
*Human Research on Learning and Memory*  
 International Graduate Program Medical Neurosciences, Charité –  
 Universitätsmedizin, Berlin, Germany

- Spring 2016 &  
Fall 2014            Guest Lecturer  
*The Developing Brain*  
Department of Psychology, University of California, Berkeley
- Summer 2015            Guest Lecturer  
*Introduction to Human Learning and Memory*  
Department of Psychology, University of California, Berkeley
- Fall 2012 & 2013        Lecturer  
*Human Research on Learning and Memory*  
International Graduate Program Medical Neurosciences, *Charité –  
Universitätsmedizin, Berlin, Germany*  
(student award for superior instruction and educational guidance)
- Fall 2012                Lecturer  
*Cognitive Neuroscience of Episodic Memory Across the Lifespan*  
Department of Psychology, Freie Universität Berlin

*Updated: November 2020*