Nicolas Schuck

Postdoctoral Researcher
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Education

2010 – 2013	***Dr. rer. nat. (PhD), Psychology***, *Summa Cum Laude* Max Planck Institute for Human Development/Humboldt-Universität zu Berlin "Aging and Functional Reorganization of Striatum- and Medial-Temporal Lobe-Dependent Memory Systems"
2004 – 2010	***Dipl.-Psych. (MA), Psychology*** Humboldt-Universität zu Berlin, Department of Psychology "Acquisition of Ordinal Position Knowledge in Human Implicit Serial Learning"
2007 – 2008	***Graduate Courses, Machine Learning (minor)*** University of Toronto Courses with Geoff Hinton

Professional Experience

Since 09/2013	***Princeton University***, Postdoctoral Researcher Princeton Neuroscience Institute Advisor: Yael Niv
10/2012 – 12/2012	***University of Michigan***, Short-Term Visiting Scholar Department of Psychology Advisor: Thad Polk
2010 – 2013	***Max Planck Institute for Human Development***, PhD Student Center for Lifespan Psychology Advisor: Shu-Chen Li, Peter A Frensch
09/2009 – 03/2010	***University College London***, Research Internship Institute of Cognitive Neuroscience Advisor: Neil Burgess
2008 – 2009	***Humboldt-Universität zu Berlin***, Student Assistant Department of Psychology Advisor: Peter Frensch

Honors/Funding

2015 – 2016	***Humboldt-Princeton grant***, Role: PI, together with Yael Niv and John Dylan Haynes (∼$22,000 total)
2011 – 2014	***German Research Foundation (DFG) grant***, Role: Cooperation Partner. Grant awarded to PIs D. Wenke and P.A. Frensch. (∼$300,000 total)
2010 – 2014	***Travel awards*** (abstract-based) by SfN, Org. Computational Neuroscience, German Academic Exchange Service (DAAD), CSHL (each $500-$1500)
2010 – 2013	***PhD-fellowship***, International Max Planck Research School LIFE (∼$41,000)
2007 – 2010	***Exchange scholarships*** by DAAD [to Toronto], Humboldt-Universität [to Toronto], and EU [to London] (each $2500-$4000)

Publications

In Process

Schuck, N.W. & Niv, Y. (in prep.). Human orbitofrontal cortex encodes a cognitive map of state space.

Schuck, N.W., Simon, J., Meeter, M., Schjeide, B.-M., Bisenack, J., Bertram, L., Gluck, M.A. & Li, S.C. (submitted). Age-dependent effects of KIBRA on probabilistic classification learning.

Chan, S.Y.C., **Schuck, N.W.**, Lopatina, N., Schoenbaum, G. & Niv, Y. (in prep.). Human orbitofrontal cortex encodes state prediction errors.

2015

Thurm, F., **Schuck, N.W.**, Fauser, M., Doeller, C.F., Stankevich, Y., Evens, R., Riedel, O., Storch, A., Lüken U. & Li, S.-C. (accepted). Dopamine modulation of spatial memory performance in parkinson's disease. *Neurobiology of Aging*

Schuck, N.W., Doeller, C.F., Frensch, P.A., Polk, T.A., Lindenberger, U. & Li, S.-C. (2015). Human aging alters neural computation and representations during spatial navigation. *NeuroImage*. 117, 141-150. doi: 10.1016/j.neuroimage.2015.05.031.

Buritica, J.M.R., Eppinger, B., **Schuck, N.W.**, Heekeren, H.R. & Li, S.-C. (2015). Electrophysiological correlates of observational learning in children. *Developmental Science*. Early View. doi: 10.1111/desc.12317.

Schuck, N.W., Gaschler, R., Wenke, D., Heinzle, J., Haynes, J.-D. & Reverberi, C. (2015). Medial prefrontal cortex predicts internally driven strategy shifts. *Neuron*. 86(1), 331-340. doi: 10.1016/j.neuron.2015.03.015.

[Commentary] Daniel, R., **Schuck, N.W.** & Niv, Y. (2015). How to divide and conquer the world, one step at at time. *Proceedings of the National Academy of Sciences*, 112(10), 2929-2930, doi: 10.1073/pnas.1500975112,

2013

Schuck, N.W., Frensch, P.A., Schjeide, B.-M. , Bisenack, J. , Bertram, L. & Li, S.-C. (2013). Effects of aging and dopamine genotypes on the emergence of explicit memory during sequence learning. *Neuropsychologia*, 51(13), 2757-2769, doi: 10.1016/j.neuropsychologia.2013.09.009.

Schuck, N.W., Doeller, C.F., Schjeide, B.-M., Bisenack, J., Frensch, P.A., Bertram, L. & Li, S.-C. (2013). Aging and KIBRA/WWC1 genotype affect spatial memory processes in a virtual navigation task. *Hippocampus*, 23(10), 919-930. doi: 10.1002/hipo.22148.

Eppinger, B., **Schuck, N.W.**, Nystrom, L.E., & Cohen, J.D. (2013) Reduced striatal responses to positive reward prediction errors in older compared to younger adults. *Journal of Neuroscience*, 33(24), 9905-9912. doi: 10.1523/jneurosci.2942-12.2013.

2012

Schuck, N.W., Gaschler, R., Keisler, A., & Frensch, P.A. (2012). Position-item associations play a role in the acquisition of order knowledge in an implicit serial reaction time task. *Journal of Experimental Psychology: Learning, Memory and Cognition*. 38, 440-456. doi: 10.1037/a0025816.

Schuck, N.W., Gaschler, R., & Frensch, P.A. (2012). Implicit learning of what comes when and where within a sequence: The time-course of acquiring serial position-item and item-item associations to represent serial order. *Advances in Cognitive Psychology.* 8, 8397. doi: 10.2478/v10053-009-0106-0.

Book Chapters

2010 Burgess, C., **Schuck, N.W.** & Burgess, N. (2010). Temporal neuronal oscillations can produce spatial phase codes. In S. Dehaene and E. Brannon (Ed.), *Attention & Performance XXIV. Space, Time and Number in the Brain: Searching for Evolutionary Foundations of Mathematical Thought* (pp. 59-69). Amsterdam, NL: Elsevier.

Invited Talks

2015 Schuck, N.W. (2015). *Human orbitofrontal cortex encodes a cognitive map of state space.* Computational Neuroscience Initiative at the University of Pennsylvania, Philadelphia, USA

Schuck, N.W. (2015). *Human orbitofrontal cortex encodes a cognitive map of state space.* Computational and Systems Neuroscience (COSYNE) 2015, Salt Lake City, USA.

Schuck, N.W. (2015). *Human orbitofrontal cortex encodes a cognitive map of state space.* SFB940 Spring School 2015 TU Dresden, Dresden, Germany.

Abstracts

Talks

2014 Schuck, N.W. (2014, 1 of 5 selected from 100+ abstracts). *Neural circuitry involved in controlling the flexibility/stability balance and the discovery of alternative task solutions.* LXXIX Cold Spring Harbor Symposium on Quantitative Biology, Cold Spring Harbor, USA.

2010 Schuck, N.W., Gaschler, R., & Frensch, P.A. (2010). *The role of position codes and item-position associations in implicit serial learning.* 10th Meeting German Society for Cognitive Sciences.

2009 Schuck, N.W. (2009). *A modality specific neural network: insights into the internal structure of semantic knowledge organization.* 51st Conference of experimental Psychologists, Jena, Germany.

Schuck, N.W., Gaschler, R., & Frensch, P.A. (2009). *Time-course of acquisition of ordinal position information in implicit serial learning.* 16th European Society for Cognitive Psychology Conference, Krakau, Poland.

Poster (Selected)

2015 Schuck, N.W. & Niv, Y. (2015). *Human orbitofrontal cortex encodes a cognitive map of state space.* Fourth Quadriennal Meeting on OFC function, Paris, France

Schuck, N.W. & Niv, Y. (2015). *Human orbitofrontal cortex encodes a cognitive map of state space.* Reinforcement Learning and Decision Making (RLDM), Edmonton, Canada

2013 Schuck, N.W., Doeller, C.F., Frensch, P.A., Polk, T.A., Lindenberger, U. & Li, S.-C. (2013). *Human aging alters neural computation and representations during spatial navigation.* Annual Meeting of the Society for Neuroscience, San Diego, USA.

2012 Schuck, N.W., Doeller, C.F., Bisenack, J., Frensch, P.A., Bertram, L. & Li, S.C. (2012). *Age-related and genetic effects on functional reorganization of memory systems.* Cognitive Neuroscience Society Annual Meeting, Chicago, USA.

Schuck, N.W., Gaschler, R., Wenke, D., Heinzle, J., Frensch, P.A., Haynes, J.-D. & Reverberi, C. (2012). *Reconfiguration of instructed task-sets based on incidental learning of irrelevant information.* 2^{nd} Einstein Symposium on Decision Making, Berlin, Germany.

2010 Schuck, N.W., & Burgess, N. (2010). *Oscillatory interference in parietal cortex: A mechanism to represent order in working memory.* Conference of Compuational Neuroscience, San Antonio, USA. Abstract published in *BMC Neuroscience*, 11(Suppl1), P173 - P174.

2008 Schuck, N.W., Gaschler, R., Keisler, A., & Frensch, P.A. (2008). *Acquisition of ordinal position information in implicit serial learning.* International Conference of Psychology, Berlin, Germany. Abstract published in *International Journal of Psychology*, 43, 159.

2007 Schuck, N.W., Gaschler, R., Keisler, A., & Frensch, P.A. (2007). *Acquisition of ordinal position information in implicit serial learning.* 49. Konferenz experimentell arbeitender Psychologen (TeaP), Trier, Germany.

Media Coverage

2015 ***DER SPIEGEL (15/2015)***, "Konzentration kann blind machen" (Attention can make you blind). Interview with me about 2015 Neuron paper.

Berliner Zeitung & Humboldt Zeitung (07/2015). Interview with me about 2015 Neuron paper.

Princeton Journal Watch, ***Medical Daily***, ***Psych Central***, "When attention is a deficit", available at http://goo.gl/2204q7.

Teaching

Courses

Winter 2015	***Neuroscience Junior Tutorial on reading papers*** Princeton University, Princeton Neuroscience Institute
Summer 2014 & 15	***Matlab for Neuroscientists*** Princeton University, Princeton Neuroscience Institute
Summer 2012	***Reinforcement Learning and Neural Network Models*** Humboldt-Universität zu Berlin, Department of Psychology
Winter 2009	***Empirical Research Training*** Humboldt-Universität zu Berlin, Department of Psychology

Student Supervision

09/2014 – 05/2015	***Kelsey McDonald***, Senior Thesis, Princeton University (with Yael Niv)
11/2013 – 05/2014	***Katya Dombrowsky***, Senior Thesis, Princeton University (with Yael Niv)
06/2011 – 08/2011	***Gesa Duden***, Research Internship, Max Planck Institute

Professional Services

08/2010 – 08/2011 ***Fellow Speaker***, International Max Planck Research School LIFE

Ad Hoc Reviewer

Acta Psychologia; Aging, Neuropsychology and Cognition; Behavioral Sciences; Brain Imaging & Behavior; Developmental Psychology; Experimental Brain Research; Frontiers in Cognition; NeuroImage; Neuropsychologia; PLoS ONE; Psychological Research; World Journal of Biological Psychiatry